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CLEAR CHOICE TEST  NETWORK ACCESS CONTROL

Amid skepticism, cool NAC tools soldier on

Some say NAC is dead, but we find 12 strong NAC products from key vendors. **Page 28**

Data center upgrades demand attention now

To start data center projects in 2011, evaluations need to be completed by this fall's budgeting. **Page 16**

Banks battling crooks who hijack customer PCs

BY ELLEN MESSMER

IN ONLINE banking and payments, customers' PCs have become the Achilles' heel of the financial industry as cyber-crooks remotely take control of the computers to make unauthorized funds transfers, often to faraway places.

That's what happened to the town of Poughkeepsie in New York earlier this year when \$378,000 was carried out in four unauthorized funds transfers from the town's account at TD Bank. First discovered in January, the town was able to finally get the full lost amount restored by March, according

► See **Bank**, page 10

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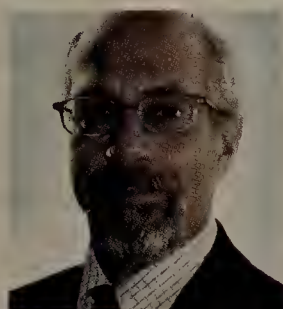
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FROM THE EDITOR | JOHN DIX

Collaboration success edges closer

Experts at the Enterprise 2.0 conference in Boston last week said the tools are better, we know more about how to deploy them sensibly and we have a better sense of what to expect. But most were in agreement that it is still hard work to get collaboration right.

In a keynote address Andrew McAfee, principal research scientist in the Center for Digital Business at MIT Sloan School of Management, said many collaboration efforts fail because companies just go through the motions. They deploy some software, name someone to lead the program and wait for something great to happen. "The reality is you have some elaborate infrastructure to build. People and process and technology and in an organizational sense. It is never an overnight process."



But there is no question companies have to embrace the new social tools, says keynoter JP Rangaswami, chief scientist for the BT Group. The younger generation of workers "have better computing experience at home than at work and that requires that we adapt in terms of what we offer as enterprise services."

A potential impediment to success is the need to give up control, Rangaswami says. That is hard for many organizations. Ten years from now, he says, the speaker giving his keynote will be evaluating our progress in terms of how well we gave up that control.

That doesn't mean throwing everything to the wind, however. You need a framework for the collaboration tools to get the most out of them, and the tools have to be coupled with business processes to get benefits, speakers agreed.

Do you lock out Facebook and Twitter to encourage use of your internal tools? You have to replicate Web functionality, but if you let a mishmash grow within the organization it will be a mess, said Murali Sitaram, General Manager of Cisco's Enterprise Collaboration Platform group.

McAfee said many of the early collaboration tools focused on facilitating communications among colleagues with which you already have strong connections. Newer tools are making it easier to collaborate with those in the next concentric ring where the connections are weaker, and those in the ring beyond that where you have no connection but there is business potential.

"This is exactly the right approach," he said, and a "big progression in short history of Enterprise 2.0."

There are probably still more stories of failed collaboration initiatives than success stories out there, but with employee expectations changed by consumer services and new tools designed to emulate consumer experience, the time may finally be right for collaboration to take off in a big way.

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iPhone shortage makes no sense

➔ **VERY SAD THAT** they could not fill the demand. (Re: AT&T temporarily suspends iPhone 4 pre-orders until further notice, says demand 10x higher than it was for the iPhone 3GS; tinyurl.com/2u4jjes) In this day and age there is really no excuse for this. Apple is at fault and so is AT&T. The phones are made so cheap offshore and both parties should have had a warehouse of them before they released them. The money just to hold your order until the boat gets here from China is unfair. If you are going to sell a product you should have it on the shelf and not a promise that it will be here soon.

Theo

➔ **OKAY LET ME** make it clear first I don't like Microsoft, but here I am sitting in an airport with my HTC HD2 using Windows phone on a call with a customer.

He sent me a document to discuss, it was pushed to me by my Exchange server. I opened it in Word, reviewed his comments and was able to answer them on the same phone call. I added my comments to the document for him to review. E-mailed the document back to him and we closed the deal still on the same phone call. Try doing that on an Apple iPhone whatever generation and you'll fall at the first hurdle, race over, contract lost...

Anon

Linux less vulnerable than Windows

➔ **MANY PROGRAMS** ON Linux can be locally installed by a user, but then they will run only with the user's permissions and access privileges.

A virus or trojan so installed will only affect that user and not the system as a whole. (Re: Dell says Ubuntu is safer than Windows; tinyurl.com/3y4x6eo) However, if the application is installed by root, then all bets are off. You have to consciously install an application as root, which is not how most people run their systems. In fact, a lot of consumer-oriented distributions, such as Ubuntu, disable logging in as root and try

to keep people from installing stuff except via the package manager, where they have some confidence that the code is "clean".

So, yes Linux systems can be compromised, but it is more difficult than on Windows systems. Note that Microsoft is trying very hard to keep people from defaulting to administrator privileges in its newer systems such as Vista and Windows 7, and require more confirmation that they want to install that application. However, Windows still has a lot of problems with "drive-by" malware installations that Linux systems will never "enjoy".

Rubberman

➔ **LINUX FOLKS SHOULD** pay more attention on who is writing code for their projects, especially those who are running large distributions. What they don't realize is that these Microsoft fanboys can't wait to hear something like this to spread the FUD. The issue at hand is that they don't know jack on how Linux security works and tend to throw all kind of nonsense out there for folks to say "see why bother using Linux".

But yet we see Windows security issues on a daily basis not because of its popularity but because of its poor security design as it was never meant to be a multi-user system.

spartan227

What IP4 address shortage?

➔ **I HAVE BEEN** hearing for so long that we are running out of addresses. (Re: Run on IPv4 addresses could exhaust supply by December; tinyurl.com/389j5v9)

Two simple solutions: 1) Reclaim

unused IP address ranges. I know of several companies that have multiple /24's that they aren't using. IANA needs to be more aggressive in reclamation.

2) Take away the public IP ranges from the cell phone carriers. There is no reason that a Blackberry or iPhone needs a public IP address. That move alone should free up several million addresses.

Anonymous

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Cyber insecurity

THE HOUSE OF Representatives Homeland Security Committee last week questioned whether the Department of Homeland Security has the authority or resources it needs to protect the nation against cyber attacks. The bad guys have stepped up attacks on U.S. agencies by 400% from 2006 to 2009, yet US-CERT (the DHS division responsible for defending federal civilian agencies against cyberattack) is understaffed and has had four directors in five years. Contractors at US-CERT outnumber federal employees by a ratio of about 3 to 1. "Given these administrative failings, it should come as no surprise that day-to-day operations may suffer," said Rep. Bennie Thompson, a Mississippi Democrat and chairman of the committee. "There is no doubt that we are not prepared to address a major cyber attack today," added Stewart Baker, a partner in the Steptoe & Johnson law firm and former assistant secretary for policy at DHS. "If we end up in a serious conflict with five or 10 very sophisticated countries, we will be attacked, and we will not know how to respond." tinyurl.com/3xvhhsk

Earn a degree in... fortunetelling?

IF YOU'RE thinking about going back to graduate school, how about pursuing a degree in predicting the future? DePaul University in Chicago plans to offer the nation's first master's degree in predictive analysis, with help from IBM. The program aims to teach students the technical skills to do computer-based data mining, including advanced data analysis and the ability to handle large data sets. The degree will

require students to take marketing courses as well. "It's not a theoretical statistics degree. It will focus on hands-on use of applications," said Raffaella Settimi, an associate professor at DePaul's College of Computing and Digital Media. tinyurl.com/3y3c3ka



iPad-controlled helicopter set for liftoff

IT'S JUST what every IT department needs: a helicopter that wirelessly sends video to its controlling iPad, iPhone or iPod Touch. Due to start shipping in September, the \$299 AR.Drone helicopter from France-based Parrot has four fans that allow it to fly in any direction. It streams video from the cameras mounted on its front and bottom back to the controlling device. tinyurl.com/3yh6un4

IPv4 address scraps looking polluted

WE'RE SCRAPING the bottom of the barrel for IPv4 addresses, and it turns out the sludge might not be so desirable. The few blocks of Internet addresses yet to be allocated under the old IPv4 protocol seem to be home to some "hotspots" of unwanted traffic, including both Internet-borne attacks and benign code for application testing. Though the traffic doesn't represent a security threat itself, an enterprise that acquired the affected addresses from an ISP typically would have to pay for the transmission of the irrelevant packets, said Manish Karir, a researcher at Merit Network, which is an educational network operator and Internet research center in Michigan. IPv4 only allows for about 4.3 billion addresses, and that supply is expected to run out within

the next two years. If some of those remaining addresses are polluted with unwanted traffic, that could make the problem even more urgent for enterprises that want new, usable IPv4 addresses. tinyurl.com/3xslngp



IT VIDEO

Motion, 3D the rage at E3

At last week's Electronic Entertainment Expo, Microsoft and Sony joined the motion-control arena with new controllers, and Nintendo launched a 3D handheld game system that doesn't require glasses. tinyurl.com/35trk7p

No more IE patches for Windows XP SP2

WINDOWS XP shops that have put off upgrading to Service Pack 3 or shifting to a newer edition of Windows will soon have a new concern to worry about: exposure to Internet Explorer vulnerabilities. Although Microsoft has told XP SP2 users several times this year that it will retire the 2004 operating system on July 13, users may not realize they will not receive any IE security updates after that

GOOD BAD UGLY

Motorola, RIM settle

IN THE smartphone market it's generally been another week, another lawsuit. So it was good to see that Motorola and Research in Motion have come to a settlement that will end all pending litigation between them. The long-term agreement involves standards such as 2G, 3G, 4G and 802.11, as well as wireless e-mail, according to a brief statement. Motorola and RIM will also give each other certain patents. Now if only Apple, Nokia, HTC and the rest will follow suit.

good

Facebook users targeted again

HUNDREDS OF thousands of Facebook users fell victim to yet another rogue application, this one identified as a video claiming to show a teacher nearly killing a boy. With the lure of the message "Teacher nearly kills a 13-year-old boy.



bad

SHOCKING!," the rogue app could take control over the victim's Facebook profile page and spread by appearing on the victim's Facebook wall, according to security company Sophos. One concern is that the rogue app might try nasty tricks in the future, like phishing for friends' passwords. Sophos is advising anyone who falls victim to this scam to take steps to remove the app from their profile and delete posts associated with it.

BP cleans up, at least on Google

EMBATTLED ENERGY company BP has been taking some additional licks in light of its acquiring key ad words on Google's search engine. The result: when people search on phrases like "oil spill" they wind up seeing sponsored links to happy stories on BP's Web site. Critics say BP would have been better off using the money it spent on key ad words to clean up the gulf oil spill.

ugly

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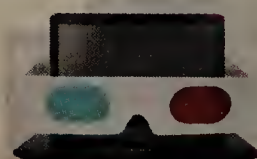
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SOURCE: CARNEGIE MELLON ROBOTICS INSTITUTE

date. The practice of linking browser patches to operating systems' support life cycles is a longstanding Microsoft policy. However, it means that users still relying on XP SP2 will be at risk for exploits of any IE vulnerability that Microsoft patches after July 13. According to data from Qualys, about half of all enterprise PCs running XP were still using SP2 as of late last month. Microsoft intends to support Windows XP SP3 until mid-April 2014. tinyurl.com/2udg2lw

Don't forget the glasses

THE 3D craze has spread from cinemas to TVs and now to laptops. The latest is from PC maker Lenovo, which just announced its first 3D laptop aimed at gamers and users who want to watch HD movies. The Lenovo IdeaPad Y560d includes a 15.6-inch screen, 3D glasses and software that can take normal 2D content such as movies and make it appear in 3D. The Y560d laptop is priced starting at \$1,200. tinyurl.com/35q6uug



schedule discounts is that the government, in the aggregate, is likely to be one of the largest purchasers of a company's products, and is entitled to take advantage of the discounts that its large buying power should command," the complaint states. However, Frascella learned that Oracle was finding ways around the GSA restrictions in order to give commercial customers even deeper discounts, according to the complaints. One alleged practice saw Oracle "selling to a reseller at a deep discount ... and having the reseller sell the product to the end user at a price below

the written maximum allowable discounts." Overall, Oracle's actions cost U.S. taxpayers "tens of millions of dollars," the suit states. tinyurl.com/359vqxa

Eucalyptus friends Windows

EUCALYPTUS SYSTEMS has released an update to the commercial version of its private cloud software, Eucalyptus Enterprise Edition, that now lets users run instances of the Windows operating system in a self-provisioned cloud, in addition to Linux. Developed by a University of California researcher with funding from the National Science Foundation, Eucalyptus allows anyone to set up a cloud platform, which then can be offered as a service, either internally or publicly. Version 2.0 of the software can track usage and costs for predefined groups. tinyurl.com/343ox7b

Oracle bilked the Feds?

ORACLE IS being sued by the U.S. government for allegedly overcharging it by millions of dollars. The government's action joins an earlier complaint filed by an Oracle employee, Paul Frascella, in May 2007. "The whole idea of GSA

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² Source: IDC white paper sponsored by HP *Gaining Business Value and ROI with HP Insight Control*, May 2009.

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TREND ANALYSIS

► Bank, from page 1

to public records, through sometimes tense interaction with the bank.

Though the town declines to discuss the matter, this big-dollar cyberheist, along with a slew of other incidents in the past year, has many bank officials worried. They're concerned that the customer desktop, especially in business banking where dollar amounts are high, is increasingly the weak link in the chain of trust.

Other cyberheists that have reached the public eye include Hillary Machinery of Plano, Texas, for \$801,495; Patco Construction for \$588,000; Unique Industrial for \$1.2 million; and Ferma Corp. for \$447,000. Schools and churches aren't immune, either. One FBI report from late last year said the agency gets several new victim complaints each week.

And businesses should be even more worried than consumers about whether banks will restore monies stolen by cybercrooks exploiting compromised computers using botnet-controlled malware. According to Gartner analyst Avivah Litan, while consumer accounts receive specific legal protections to restore unauthorized transfers under what's called the "Reg E" federal regulations, businesses do not.

Disputes over hijacked computers and fraudulent transfers are erupting into the public eye as businesses quarrel with banks over who is at fault when a cyber-gang makes off with the money. The restoration of lost funds occurs on a case-by-case basis.

The dilemma for banks boils down to this: How far can they go to help protect customer desktops that function like part of their shared network but aren't owned by the bank?

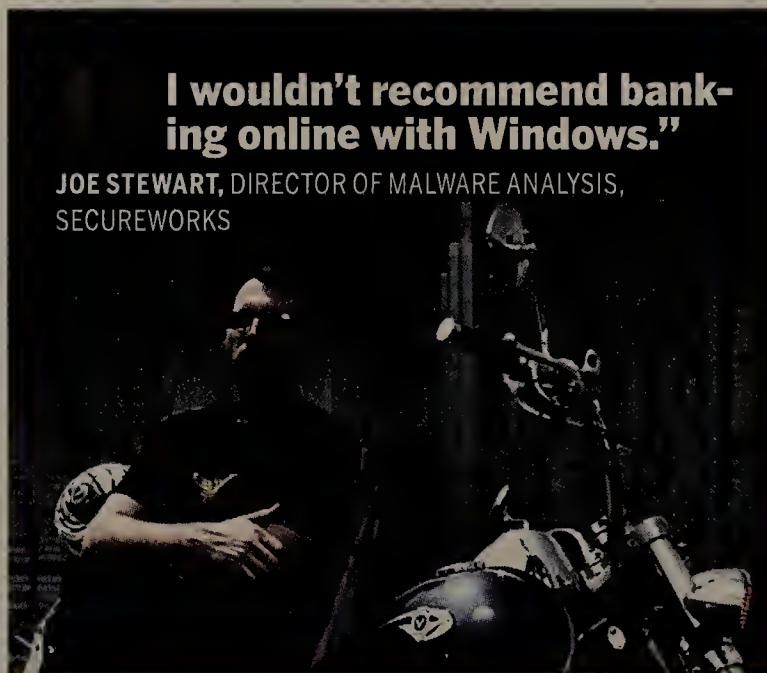
Banks are faced with the prospect that "customers own PCs that have been in the hands of Russian crime syndicates," says Jeff Theiler, senior vice president at Hancock Bank, which primarily operates along the Gulf Coast region.

Like many other banks, Hancock finds itself getting more involved in helping customers defend their machines. One recent step has Hancock making available for free specialized protective software for use by the bank's 100,000 e-banking customers.

Developed by Trusteer, the software becomes active when the customer's PC is interacting with Hancock Bank's online banking services. Basically a browser plugin, the security software can detect and block keylogging, stop re-directions of the user

and inform the bank if the PC's infected with malware.

If a problem is detected, "the bank will call them and tell them," Theiler says, adding cybercrooks would rather target high-dollar automated clearinghouse (ACH) transfers and other substantial payment transfers from business customers, but they wouldn't turn down what they might be able to get from consumers doing online e-banking. "No bank is immune from being faced with these ACH issues regarding a computer malware attack," Theiler says.



But it's a tough question on how far the banks can or should go to try and impose security requirements on their customers' desktops. Theiler acknowledges that the approach for existing online banking customers is mainly to "highly recommend" using the Trusteer-developed software.

The Trusteer software, tailored for each bank, is now offered by almost 40 institutions, including SunTrust, HSBC, Fifth Third Bank, ING Direct USA and Huntington National Bank. Trusteer, along with Prevx and Trust-Defender, are among the few security vendors coming up with defenses of this type for the banking industry, according to Gartner's Litan. She faults larger security software providers, including McAfee, Symantec and Trend Micro, for doing so little.

But this type of help-the-customer banking software is not an approach Litan thinks should necessarily be a high priority for financial institutions.

"My advice to banks is they can't count on it, it's not ubiquitous," she says, adding, "They need to make clear it's not total protection."

Once banks get involved in this help-the-customer software approach, a number of potential liability issues may arise if something bad does occur, she says. "The higher

priority should be on things they can control, such as fraud detection and out-of-band protections," Litan suggests.

This so-called out-of-band security in e-banking and payments includes automated phone calls that can be initiated when online behavior analysis tools indicate suspicious online behavior, as well as systems that involve a recording of a voice pattern that can be matched against someone speaking their password.

"The threat landscape is changing," says Christopher Beier, senior product manager in the electronic banking services group at Fiserv, an online payment and services technology provider for banks. Fiserv recently began to make the PhoneFactor phone-based out-of-band authentication system available to its customers, which include 24 of the largest banks.

Phone-based authentication "doesn't take you away from the online banking channel," Beier says. "But I know the computer might be compromised. So you take the authentication out of that channel and onto the phone." This method will likely hold the most appeal in high-risk, large-dollar transactions, he notes.

Bank Leumi, as well as some banks in Australia, are known to be leading the charge in this type of out-of-band authentication, Litan says, but there are few practical roll-outs.

Another approach involves beefing up back-end fraud detection that's in use to monitor for credit- and debit-card fraud so that it also includes e-banking and payments.

Dual-authentication, which requires at least two people to approve a transaction, also ups the security ante, Litan points out. Another approach she believes can be effective, called "positive pay," involves setting guidelines in advance on exactly who the bank is authorized to pay and the thresholds. Litan acknowledges that though it sounds simple, "positive pay" can be hard to do because business software may not already be set up for this or businesses need more flexibility than that approach allows.

Brian Krebs, an investigative journalist who has put the spotlight on the cyberheist epidemic in his online column KrebsOnSecurity, comments, "My mantra on this continues to be that any commercial banking technology that does not begin with the premise that the customer's machine may be and probably is already compromised with malicious software doesn't stand a chance of defeating today's cyber crooks."

"The criminals appear to be limited not by law enforcement or bank security, but mainly by the number of money mules they can harness at any one time to help them haul the loot from the accounts they've compromised," Krebs says, adding he's investigating whether one group is actually "contracting that process out to several different mule recruitment and cashout gangs" in order to find enough money mules.

According to an FBI report from last November about cyberheists and the role of the money mule, cybercrooks' fraudulent ACH transfers are often directed to the bank accounts of willing or unwitting individuals within the United States.

These people are often recruited through "work from home" advertisements or contacted by recruiters after placing resumes on popular employment sites.

Compromised computers used in online banking have gotten the attention of the Financial Services Information Sharing and Analysis Center (FS-ISAC), a group whose mission is to provide a forum where its members, which include Citigroup, Bank of America, Goldman Sachs and Merrill Lynch among others, can discretely share security concerns and keep direct contact with federal officials.

FS-ISAC has gone so far as to send out a notice telling its membership to only interact with business customers via computers without browser and e-mail capability. It was an awkwardly worded recommendation that was later clarified to mean a "PC dedicated to online banking," Litan says. But she regards this as inadequate.

Other recent activity in the federal government sector includes a symposium organized by the Federal Deposit Insurance Corp last month on the threat of hijacked computers and cybercrime to business.

"The user workstation is the weak point," says Joe Stewart, director of malware analysis at SecureWorks, who has done extensive work looking at botnet-based Trojans such as Zeus and Clamper designed to hijack the victim's computer and execute unauthorized financial transactions by stealing credentials and account information.

The basic architecture of online banking was designed without the idea that the user would encounter this type of malicious Trojan, he notes, adding, "In that sense, this paradigm of banking is broken."

Since the known banking Trojan malware is Windows-based — "there are no Mac banking Trojans yet," Stewart says — he views the situation today as largely one centering on Windows-based machines. "I wouldn't recommend banking online with Windows." ■

Your tech vendor's been gobbled up: Now what?

BY JIM DUFFY

BROCADE'S ACQUISITION of Foundry Networks took Foundry customer LINX by surprise.

The London Internet Exchange had been using Foundry's switches and routers for 10 years, and the vendor showed no signs of being an acquisition target or candidate.

"Those signs tend to be rather obvious," says LINX CEO John Souter. "They weren't necessarily showing those signs when the Brocade thing happened."

Souter and his colleagues at LINX went through a range of emotions when the news broke in July 2008 of Brocade's \$3 billion offer. Especially since LINX didn't know a whole lot about Brocade.

"We asked the people who were deploying the Brocade technology what they thought and generally got very encouraging noises. Since then ... we're really encouraged," Souter says.

Souter's reactions are typical of a customer of a company being acquired. Users worry that their assets might be stranded or neglected after their primary vendor is purchased, due to product streamlining, an exodus of expertise, strategic refocus, or all three.

After a lull in high-tech acquisitions during the recession, merger and acquisition activity has picked up again and some analysts predict that further big deals lie ahead. For customers, acquisitions can throw into question future plans and the stability of projects underway.

Andrew Poodle is going through his second such situation. Poodle and his Craftspeak Web site development company use the MySQL database in its clients' projects. He was a MySQL user when Sun bought MySQL in 2008, and it was déjà vu all over again for Poodle when Oracle bought Sun.

"When the takeover was announced there was initially some worry and concern," Poodle says. "The transition itself has been relatively painless in terms of the interaction between customer and MySQL. We still talk to the same people who have the same knowledge and passion for a product they have helped develop. The day-to-day stuff hasn't changed, but I think that's not where the worries and concerns lie."

Oracle appears to be putting more emphasis on the enterprise version of MySQL than on the product's community edition, Poodle says. Resources available to community users are less apparent than they are to customers of the enterprise edition, he says.

Of more serious concern is the lack of life-cycle policy information for community users. "If you look at the life-cycle policy carefully, it promises the extended support for enterprise customers," Poodle says. "There is no mention of community."

He says users of the community edition had to haggle with Oracle to get the latest security patch for the software. (Oracle did not respond to requests for comment.)

Users who've experienced one of their primary vendors being acquired suggest being

proactive in opening up the lines of communication with the acquiring company.

This helped Techevolution, an IT consultancy and data center collocation company that went through Dell's acquisition of EqualLogic, to avoid any hiccups. EqualLogic supplies Techevolution's iSCSI storage arrays and Dell acquired the company in 2007 for \$1.4 billion.

"We were worried but it went very, very smooth from the transition of tech support to new equipment that we purchased from Dell," says Techevolution CEO Corey Tapper.

Techevolution ran a tech support "fire drill" shortly after Dell closed the EqualLogic deal by disabling a drive in one of its EqualLogic arrays. "Dell had the same [outage] response, if not faster," Tapper says.

He recommends users be proactive in learning as much about the acquiring company and its strategy as possible, while maintaining and even accelerating dialogue with the supplier being acquired.

"Some people buy equipment and never talk to their vendor again unless something breaks or they go and buy something five years later," Tapper says. "We were constantly talking to our vendors. Being prepared and knowing who the new parties are and getting acquainted with them is really important, because if you don't know them, one day you wake up and you're married to a new company. You don't know what the protocol is for the new company, and that could cause some grief." ■





Bill Schlough

SENIOR VICE PRESIDENT AND
CHIEF INFORMATION OFFICER,
SAN FRANCISCO GIANTS

Bill Schlough and team have implemented an array of revolutionary systems to create a competitive advantage on and off the field. His team provides day-to-day technical support while collaborating with internal clients to set the technological direction for the San Francisco Giants.

FOR MORE INFORMATION:

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Simplicity in The Field

ShoreTel Steps up to the Plate for SF Giants
to Improve Service, Lower Costs

Introduction

In 2007, the San Francisco Giants finished first — first in Major League Baseball for spending on telephony, that is. Giants CIO Bill Schlough says he was motivated to change that dubious distinction, and set in motion a project to lower communications costs, reduce complexity and improve service. Schlough and team turned to ShoreTel for their communication solution. "Really, it was the simplicity and the reliable architecture that stood out as key differentiators," Schlough says.

ShoreTel, a leading provider of unified communications solutions, based in Sunnyvale, Calif., offers simplicity as its core advantage. ShoreTel's architecture differs fundamentally from other Voice over Internet Protocol (VoIP) telephony solutions in that it was built from the ground up for IP. It's open, switch-based and designed to grow from day one. For business-focused CIOs increasingly tasked with managing telecom along with IT and networks, ShoreTel's solutions fit right in with existing infrastructure. As Schlough points out, they're as easy to manage and scale, as they are to deploy and use.

Here's what Schlough had to say about the Giants' ShoreTel experience:

What was your reaction when you learned the Giants were No. 1 in telecom spending?

I immediately picked up the phone and called our trusted partner, AT&T, to help us identify the cause and propose a solution. I knew it was time to dig in, and change our position. We had been using a Centrex model for our telecommunications needs, and had not prioritized making the move to a more modern and cost-effective solution. Our objective in making a change was threefold:

- Reduce the operating costs of our telecom facilities;
- Improve the ease of management, support and use of our telecom platform for all its related services;
- Improve productivity in our front office, and be able to use telecom as a tool to drive our business.

A system that's designed from the ground up to leverage the inherent advantages of IP, such as a distributed and resilient architecture, offers a number of key advantages. When you compared ShoreTel's approach with Cisco and Avaya, what unanticipated advantages did you also discover?

We expected that we would be facing a significant learning curve with any solution we selected. Since we were accustomed to an outsourced model — the Centrex system — we knew we would need to build our internal expertise. We anticipated that our actual bills would be reduced, but we also anticipated a need to increase our support staff, train them in managing the system, and retrain all of our end-users on the operation of the new system. We also expected to have some degree of reduced reliability because we viewed the new VoIP systems as being more computer based, and lacking the rock-solid reliability that we had grown to expect with Centrex. The thought of rebooting our phone system was naturally a bit disconcerting, to say the least. But, none of those anticipated issues materialized.

How have you been able to reduce the level of complexity that typically accompanies the technology required to operate a state-of-the-art 21st Century ballpark?

We built our park in 2000 to be as future-proof as possible. To achieve that, we prewired

every conceivable location we thought might eventually need a network or phone connection. It was a good plan at the time, but it led to an extensive and complex wiring configuration. For the voice side of the equation with our legacy system, that meant we had to do a lot of cable management for changes of phone locations. With our ShoreTel VoIP system, all the moves and changes are logical rather than physical. We simply reassign the telephone unit to a new location or user through our management console. It's a simple, browser-based interface with a view of the entire system.

Our call center was similarly complex because it was a legacy system that was becoming increasingly challenging to support through our Centrex phone system. In order to

easy integration with existing business systems, and powerful, feature-rich unified communications capabilities. What additional benefits have your staff discovered from ShoreTel's flexible system?

We expected to devote significant time sending our staff to training classes so they could learn the administration functions, but that's been totally unnecessary. The ShoreTel solution is easy to use and manage, and when the staff has questions, they are able to reach out [to ShoreTel] and get their questions answered.

Bottom line: Like any other IT component, the most important measure of success for the Giants' communications system is business value. An intentionally less-complex system from ShoreTel is paving the way for easy integration with the

Now that we've put the ShoreTel system in place, we have been able to remove the complexities that were limiting what we could do.



get even the smallest changes made, we needed to hunt down technical people who were qualified to service our outdated system. It was expensive, and took a lot of time and effort just to find the experts. Now, we're able to make changes in our new call center system through our ShoreTel management console. The changes are easy to make, and don't require highly trained experts — we handle all of the changes and updates internally.

ShoreTel's brilliantly simple approach to IP-based communications offers many benefits that standard server-based solutions cannot provide, including highly reliable switches and built-in redundancy,

Giants' internal systems such as customer relationship management, which means better customer service. And let's not lose sight of the issue that started the Giants down the path to ShoreTel — costs. ShoreTel's proven return on investment and industry-lowest total cost of ownership were strong differentiators. What other factors have led to the success of your ShoreTel deployment?

Now that we've put the ShoreTel system in place, we have been able to remove the complexities that were limiting what we could do, and we are now able to better leverage the tools we have. Almost all companies say that they guarantee customer satisfaction, so it almost sounds trite. But ShoreTel really walks the walk.

 **ShoreTel**
Brilliantly simple™

NETWORKWORLD
Custom Solutions Group

UC pays off for engineering giant Fluor

BY JIM DUFFY

FLUOR CORP. wasn't specifically looking to implement a unified communications infrastructure, but pressing telecom needs took the engineering giant there anyway.

Fluor had been a customer of Fujitsu, which exited the U.S. PBX business in 2001. That forced Fluor's hand to not only work with another vendor but also find one that could allow the far-flung company to set up and tear down ad hoc systems for project teams on a moment's notice.

"We're in constant greenfield/mobilization deployments," says Gary Rogerson, voice architect for enterprise voice services at the \$22 billion global engineering, procurement, construction and maintenance services company. "We constantly bring out new systems and bring them back and do it over again, every three months to two years."

Fluor has been working with Avaya since



Global engineering firm Fluor has invested \$10 million to \$12 million in its unified communications infrastructure, which covers 15,000 IP telephones over 30 systems.

2006 and has invested \$10 million to \$12 million in its UC infrastructure. The company has about 15,000 mostly IP telephones over 30 systems, and has implemented Avaya Aura Session Manager to connect several locations via Session Initiation Protocol (SIP) trunks.

Avaya Aura Session Manager is an IP-based,

core routing engine that enables centralized installation and distribution of communications applications to branch, field, remote offices and teleworkers, eliminating the need to install applications at every location. This is key for Fluor as it establishes and then decommissions communications systems at construction sites on the fly.

"Our focus is on rapid mobilization and demobilization of project sites," Rogerson says. The sites generally support five to 500 users, from two months to two years, and oftentimes with very little notice. "We've had some FEMA [Federal Emergency Management Agency] work that's come up with [Hurricane] Katrina, where I got called on the weekend and we had to have a PBX up and working with 1,200 handsets within four days."

Trying to do this for a project site of 150 people with a digital TDM PBX would cost \$120,000 to \$135,000 vs. \$18,000 to \$20,000 for an IP PBX, handsets and applications, Rogerson says.

Even though this kind of flexibility and cost savings at the job site was the main catalyst for going with an IP-based UC system, Fluor implemented it companywide as well, at its Irving, Texas, headquarters and 135 offices worldwide. One of the applications running on top of the infrastructure is ABST's Call Express unified messaging package, a Web-based application that connects the voice mail systems of Fluor's 45,000 employees.

With Call Express, users go to one URL and type in the same login used for phone access to get a Webmail interface that shows all of their fax and voice messages, Rogerson says. They also get notifications, with a URL, of those messages sent to their e-mail. (Fluor's legal department won't allow WAV file attachments in e-mails that actually play back the message on a user's computer, Rogerson says.)

Fluor is also looking at deploying IP video on top of its UC infrastructure as a

Smooth skating for Buffalo Sabres' UC project

The National Hockey League's Buffalo Sabres needed a customer-driven system that facilitates rapid response from the team's account services and ticket office operations.

"The business that we're in relies so heavily on our phone system that we knew we needed to be on the cutting edge," says Dan DiPofi, COO of the Buffalo Sabres.

Plus, Fujitsu exited the market, leaving the Sabres with an aged, obsolete system on a copper infrastructure, bereft of replacement parts.

The Sabres are three years into their \$400,000 implementation of a ShoreTel UC system, which includes 20 ShoreGear voice switches and 700 IP phones connected over fiber. Integrated with the system is the Sabre's CRM application, which displays information about the caller when the call comes in to HSBC Arena in Buffalo, N.Y.



Displays show relevant information on new callers and those already in the database, so agents see the caller's level of participation and can respond appropriately.

The Sabres also integrated ShoreTel's Personal Call Manager application with Microsoft Outlook to put all of the team's employees on the same phone and voice mail system. This allows for integrated messaging, such as contact screen pop and calendar integration,

so that employees can make calls from local online directories with the click of a mouse.

The system also allows for a virtual office setup, DiPofi says, in which phone messages follow employees around wherever they are — in a fixed location or mobile — and also show up as WAV files in e-mails.

Future capabilities of the system the Sabres are contemplating include the ability to queue callers to the account services department according to how much business they do with the organization.

"People would have priorities based on their status within the organization," DiPofi says. "A suite holder spending a couple hundred grand a year moves farther up in the queue than someone on hold inquiring about the circus."

— Jim Duffy



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replacement for an older videoconferencing system using older ISDN equipment and circuits. The impetus for this was the recent global recession and the desire to reduce both telecom and travel costs, Rogerson says.

"You can really rack up the charges with ISDN," he says.

Fluor is currently wrapping up its initial deployment of Cisco Tandberg H.264-based videoconferencing systems.

The company is also deploying SIP trunks between its centralized Avaya Aura Session Manager system and a mobile PBX system from Sprint/Nex-tel. This will allow any Sprint handset used by a Fluor employee to function as an Avaya handset, Rogerson says, with short digit dialing between any phone on the company's IP network.

Any call on the network will not incur airtime charges, Rogerson says -- Sprint treats it like a mobile-to-mobile call and charges come in a static monthly bill.

A drawback to the UC deployment is that Avaya service and support still seems rooted in the old world, he says.

"There's still an old telephony mentality on the service and support side as well as some of the architecture within Avaya," he says. "That's been an issue for us because we're a complete self-support site. We have four Avaya engineers, all top-level certified. But we constantly run into issues where we don't have access to do this or that even though we've got the highest-level customer access."

That glitch, however, is not stopping Fluor from expanding its implementation. Ongoing plans include deploying more SIP trunks to replace point-to-point IP links, which will augment DID routing for a private dialing plan, Rogerson says.

Fluor has already replaced 20 ISDN Primary Rate Interface circuits with SIP trunks for a 30% to 40% savings, he says.

The company is also relying on SIP to allow it to further integrate collaboration applications, such as IBM's Lotus Same-time and Domino, Microsoft SharePoint, OCS and Live office documents, and Google Wave into its UC infrastructure.

"The eventuality is that we'll have a corporate Facebook application that will [support] IM and desktop videoconferencing, integrated with click to dial, e-mail, and groups with teams or projects that you're working on," Rogerson says. "It's all one Web-based app that has all collaborative tools... with some sort of hook-in to video and voice."

"I look at UC as... unified communications and collaboration," he says. ■

Data center upgrades demand immediate attention

BY TIM GREENE

SCHOOL IS out for summer, but it's time for IT executives to hit the books to prepare for a 2011 data center refresh that will deliver cost savings enabled by virtualization and flatter architectures with lower latency.

Enterprises need to tap major data center infrastructure vendors, not necessarily to choose one but to hear what they propose and

determine how their proposals align with the needs of the company, says Tom Nolle, president of tech consulting firm CIMI Corp.

"The 2011 data center refresh will be the most complicated thing ever attempted by enterprises," Nolle says. Reading proposals from data center vendors is the best way for decision makers to educate themselves about the real architecture issues, he says. So far, education is lacking.

Based on CIMI surveys, general ignorance about data center issues is high. Ideally, technology literacy should be identical whether a business has a related project underway or not, Nolle says. That way, potential customers are informed even if they have no immediate need for the technology.

But in the case of data centers, there is a 70% difference in literacy between those who have no ongoing data center projects and those who do, he says. So businesses just beginning to plan data center projects have a steep learning curve, especially if they plan to make a purchase near-term.

"That means you're flying by the seat of your pants, and the decision-making process will be stressful," Nolle says. "That's a tough position to be in when management is demanding success and ROI."

However, the urgency to make decisions may not be as great as Nolle projects, suggests Zeus Kerravala, an analyst with the Yankee Group. Redesigning and building virtualized data centers are major projects that warrant time spent choosing the right alternative. Mainstream adoption might not occur until 2012 or 2013, he says. "It needs to be proven that it works, and that's a big leap of faith right now," he says.

One indicator of customer commitment to data center upgrades is what they spend on data center switches, says Matthias Machowinski, an analyst with Infonetics. Sales of data center switches worldwide were \$3.2 billion in 2009 and are projected to be \$3.7 billion this year. The average growth from 2009 to 2014 is expected to be 10% per year.

That may not seem like extraordinary growth, but during the same time period, the price of 10Gbps ports are expected to drop, so total revenue growth registers a lower rate than growth in numbers of ports, he says. Infonetics projects 8 million 10Gbps ports will ship in 2010 and 14 million in 2014.

Regardless, the technology is complicated

► See **Datacenter**, page 25



Brocade: With its purchase of Foundry, Brocade just announced a data center strategy that relies on Brocade's historic storage strengths in combination with Foundry's switching expertise.

Cisco: Holistic approach relies mainly on Cisco-made gear announced last year.

Enterasys: Freshly announced strategy that relies on partners and is anchored on limited switch offerings.

HP: With its purchase of 3Com HP makes many of the essential data center elements, reducing the number of vendors to deal with and assuring interoperability.


IBM: A server- and management-centric strategy articulated last year that relies on resellers and OEM partners to provide the network infrastructure, including Juniper.

Juniper: Its Stratus Project announced earlier this year relies on server, storage and software partners to develop a data center fabric that includes management, storage, computing and switching.

Ignore Technology

(Then Put It Everywhere)

From the Editor-in-Chief, *MIT Sloan Management Review*



Smart companies are racing to find new ways to capitalize on exponentially increasing computer power, storage capacity, communications speed, and “smart-world” instrumentation. They’re finding better ways to make innovation happen every day.

But the key, says Jeanne Ross, is for companies to start by ignoring technology.

Really, she says. Ignore it.

Strange advice, coming from the director and principal research scientist at the Center for Information Systems Research at the MIT Sloan School of Management. But that’s the best way to let IT work for you, she says. Companies, Ross argues, need first to figure out what kind of value they want to create before they can usefully consider how IT can help them create it. They need to trust themselves—and trust technology and their CIOs—to work backwards from the vision of how they want to operate and what they want to be.

Moreover, it doesn’t matter whether your business is science-oriented, tech-oriented, media-oriented, people-oriented, or far-off-the-grid-oriented. Andrew McAfee, research scientist at the Center for Digital Business at the MIT Sloan School, says that if you’re not now using data and scientific analysis to back up intuition when making a decision, you soon will be.

The following conversations with Ross and McAfee make up the first in a series of special editorial sections created by the editors of MIT Sloan Management Review as they explore the shape of “The New Intelligent Enterprise.” The goal of the series is to provide strategic insights to IT leaders about how to address the challenges and opportunities presented by the ever-evolving nature of what technology can do. This first section draws on the expertise of leading MIT faculty members; coming sections will feature insights from top corporate executives.

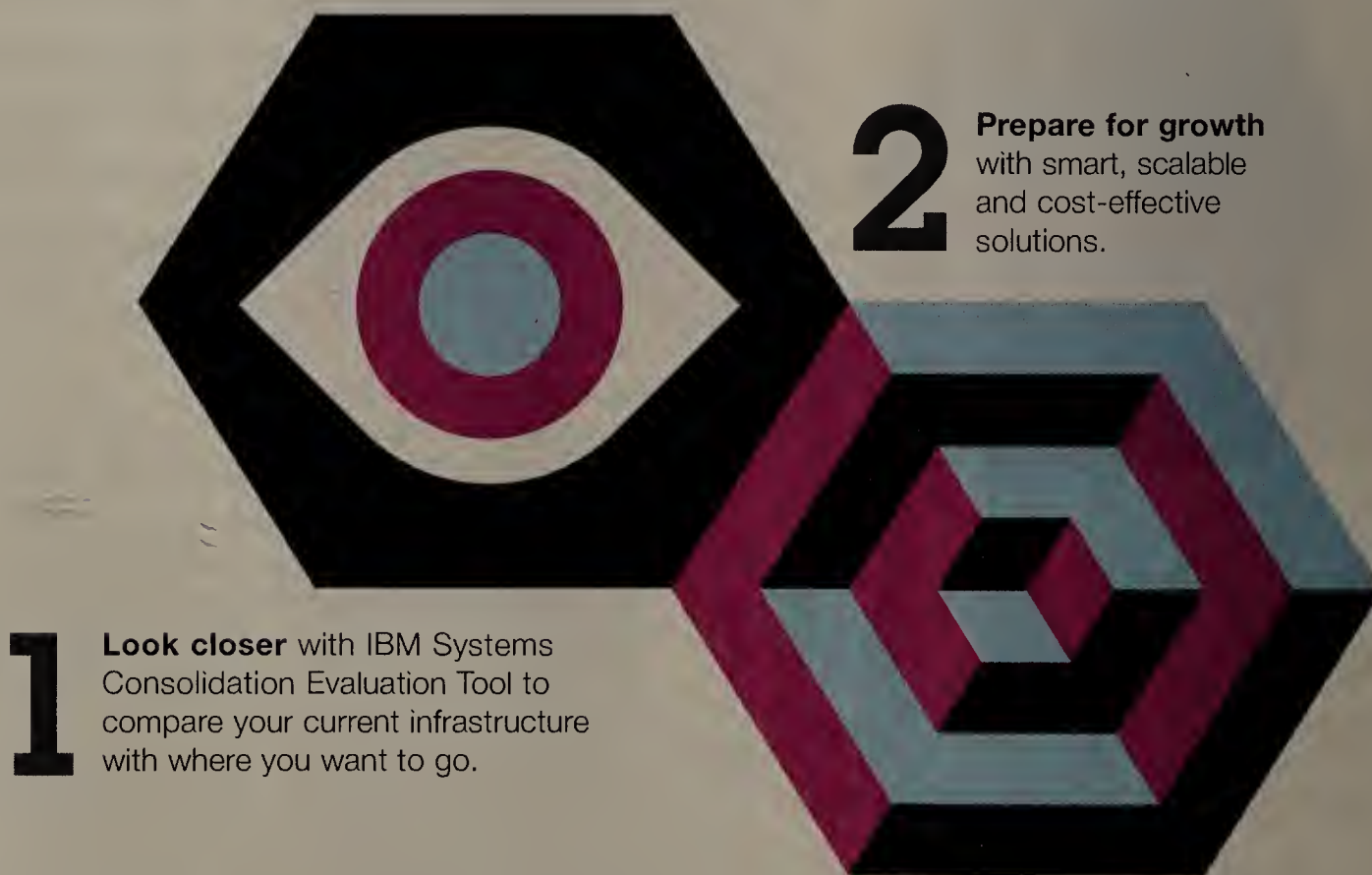
Two leading IT strategy experts from MIT on what CIOs need to know about the opportunities—and threats—of a world where evolving technology enables companies not only to *be* smarter, but to *act* smarter, too

— Michael S. Hopkins,
Editor-in-Chief, *MIT Sloan Management Review*

Building the engines of a Smarter Planet:

Five ways midsize businesses can create a more dynamic infrastructure.

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JEANNE ROSS

Why Heroes are Bad

MIT technology strategist Jeanne Ross tells why technology will underpin everything, become a bigger business driver than ever, and lift the significance of the CIO—but shouldn't be the first thing an organization thinks about.



Jeanne Ross

CIOs will become business process engineers. And IT managers are perfectly positioned to do this because their entire lives have been spent understanding processes as they've implemented technology to support them.

CIOs are now asked not only to ensure that IT works seamlessly while cutting costs, but *also* to drive growth. What changed?

Several things. What tends to happen is that non-CIOs running an organization look at competitors and start to get their arms around what information-related innovations are possible. They don't fully see the opportunities, but they see that what's ahead is going to be an IT-driven phenomenon. They decide that their current data won't get them there. And they turn to the CIO and say, "Fix it." Or a company has made an acquisition and they've been talking about cost savings, as well as promising new services to customers. They bring the new company on and say, "Well, how are we going to make this happen?"

It used to be that a lot of people found operations uninteresting. But there's been a slow recognition that success is not just about finance, say, or building the right portfolio of companies. It's about getting operations right.

And IT becomes the path to operations success?

Actually, I think companies are better off not thinking about technology. Stop framing it as, "What will technology let me do and then I'll figure out what I want to do with my business." You used to have to do that, but you don't anymore. Now you can imagine how you want to run your business and then ask how technology can get you there.

At this point, if there's something you really want to do, somebody will be able to help you find a technology that will do it. And it will probably be affordable. The more fundamental question is a matter of sitting down with the smart people that are already inside the company and asking, "How can we operate?" This is a decision you have to make. You have to put a stake in the ground and start building a foundation for it.

But you're an IT person, and it sounds like you're saying IT is secondary.

Yes, I am telling you to ignore the technology. "Ignore"

is a strong a word, but because people are so crazy about IT now, I think it's the right advice. Ignore the technology. Think about how you would like to run your business.

What's the role of CIOs, then? What should they be doing to ensure they play a valuable strategic role in leading companies to capitalize on what IT now can do?

The CIO will continue to have responsibility for technology because somebody has to be thinking about what's possible and what experiments to run. Marketing people can do this, but they're usually more comfortable if they have a technologist working with them.



To enhance a company's strategic decision making, though, the most important thing CIOs can do is to provide clarity around the operating model. It used to be that IT managers did whatever each individual business unit manager wanted. Now they're saying, "IT is about how we function as an enterprise." Even though you wouldn't think that's new anymore, it's like they've learned it again. The big evolution for CIOs will be the ways they take on responsibility for business processes in organizations. They need to become business engineers. It's a special skill set to

Managing change of behavior is much bigger than managing change of the technology.

figure out how to bring together a company's whole portfolio of existing skills in IT and in the business and how to engineer processes that are implementable and valuable. It's really hard.

But IT managers are perfectly positioned to do this because their entire lives have been spent understanding processes as they've implemented technology to support them. IT people now talk about "our level one processes" and "our level two processes." They have that recognition of what technology capabilities have to be built underneath things.

As IT leaders become end-to-end business engineers, creating new collaboration across units, what business benefits have you seen result?

There are many. One critical one is that data sharing across units enables a company to present a single face to the customer. Increasingly, global companies are insisting that their suppliers provide a single point of contact for sales and support. Companies that can't share customer and product data find it difficult to meet this type of customer demand.

To recap: you're saying, Ignore IT and design the business operation. But you're also saying, You know who's good at this? The person who's spent all his or her time thinking about IT.

You're right. And the biggest dilemma is that if I'm CIO and you tell me exactly how you'd like the business run, my job is to admit that our existing technology is an obstacle, map out a new direction, and get

you to accept that it will happen much slower than you want.

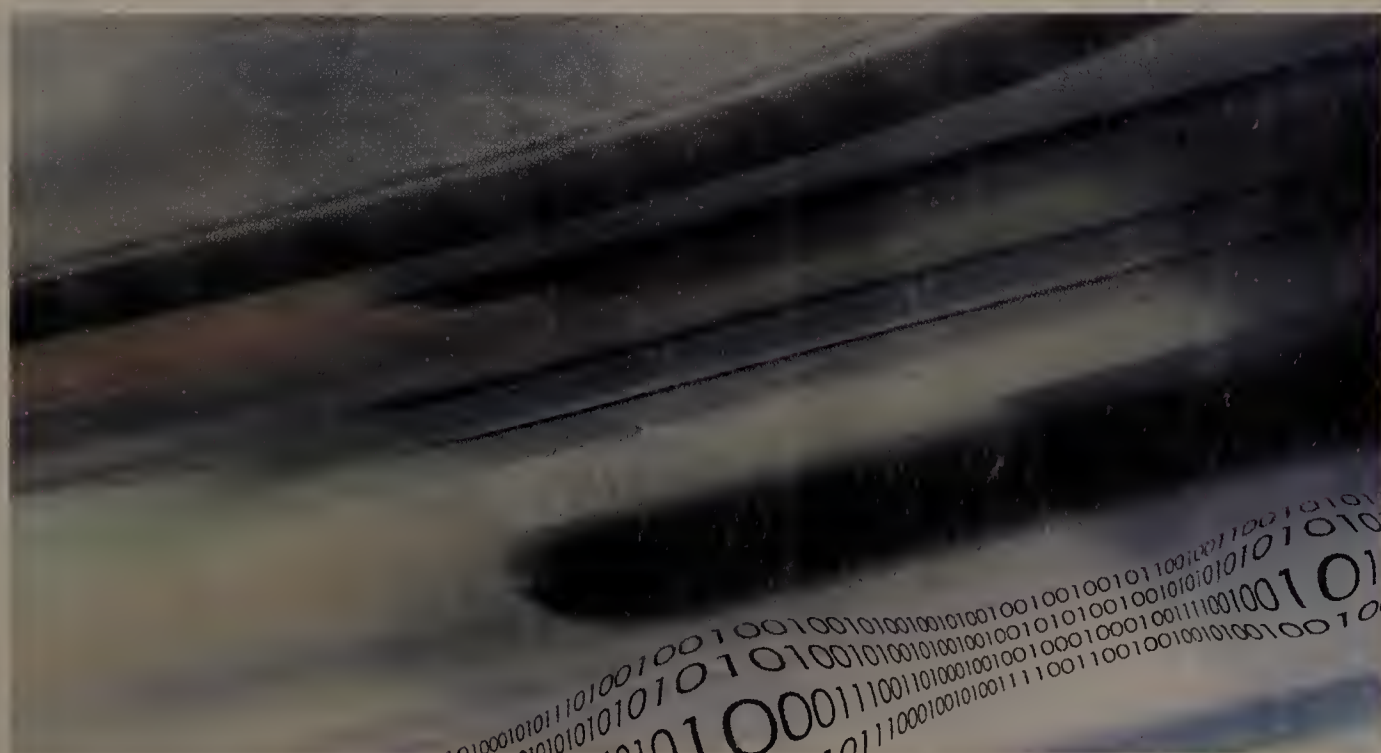
The most important thing for CIOs to do is to find high impact things to do near-term while they're pursuing the longer-term. Find one thing the company can do now that's going to make a difference and get the momentum going. That is a gift. Not all CIOs can do it. Their inclination is just to say, "Oh, my God, this is such a mess. Here's the five-year plan."

Managing change of behavior is much bigger than managing change of the technology.

Is there a behavior-change challenge that organizations especially face?

As we steer toward more automation, more standardization across the enterprise, more data sharing, we're increasingly going to have to stop people from performing heroics in the workplace. We used to rely on people to be heroes. We'd say, "Do something brilliant and whatever the customer wants." That's just not going to work in today's world. Because we need things that work across the enterprise, and heroism is too unpredictable. When the right hand doesn't know what the left hand's doing, it just messes up everybody else. Your heroics become my problem.

So heroics are out. What's in is a conception of the organization and you as a team. If you have to do something heroic, you better make sure everybody knows what you just had to do. As companies get better and better, they'll call for those heroic behaviors less and less.



Redefining X.

When an organization needs more computing power for today's memory-intensive workloads, the conventional wisdom is to buy more servers. This can lead to massive inefficiency and server sprawl, with the majority of servers today running at only 10% utilization.¹ As the computational demands of a smarter planet continue to explode, this sort of inefficiency has become a problem—a problem IBM engineers have now solved. The 5th generation of Enterprise X-Architecture[®] from IBM featuring the Intel[®] Xeon[®] Processor 7500 Series lets you add memory independently of the processor. As a result, IBM eX5 systems can leverage 6x more memory than current x86 servers, reduce storage costs by up to 97% and cut licensing fees by 50%.²

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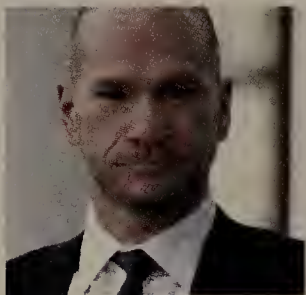


1. McKinsey study: <http://www.datacenterknowledge.com/archives/2009/04/15/mckinsey-data-centers-cheaper-than-cloud/>. 2. Comparison of IBM System x3850 X5 + MAX5 with total 96 DIMMs x 16 GB for total 1.5 TB of memory vs. IBM System x3850 M2 with 32 DIMMs x 8 GB = 256 GB. Comparison of processor-based licensing fees on current Generation 4 processor systems with 64 DIMMs vs. the IBM System x3690 + MAX5. IBM eXFlash technology would eliminate the need for a client to purchase two entry-level servers and 80 JBODs to support a 240,000 IOPs database environment, saving up to 97% in server and storage acquisition costs. IBM, the IBM logo, ibm.com, X-Architecture, Smarter Planet and the planet icon are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. A current list of IBM trademarks is available on the Web at www.ibm.com/legal/copytrade.shtml. Intel, the Intel logo, Xeon and Xeon Inside are trademarks or registered trademarks of Intel Corporation in the United States and other countries. © International Business Machines Corporation 2010.

ANDREW McAFEE

The Scientific Mindset

Of all the ways that changing technology capabilities will remake organizations, says MIT's Andrew McAfee, none is as big as the transition from intuition-based decision making toward an approach based on science.



Andrew McAfee

As one former CEO of a tech giant told me: 'If only we knew what we know, we'd be three times as productive.' When work takes place only within silos, there's going to be a lot of redundancy and waste.

What's the most significant management shift that evolving IT capabilities will drive?

It's really hard to understand what new possibilities have opened up and what important constraints are gone because of the cornucopia of technology that we're sitting on. One of the biggest changes is that when you have this unbelievable amount of computing horsepower and a mass of data to apply it to, you can be a lot more scientific about things. You can be more rigorous in your analysis. You can generate and test hypotheses. You can adopt a much more scientific mindset.

If you don't try to migrate your company and your decision-making in that direction, you're missing out on a huge opportunity, and you had better hope your competition is also not moving in that direction. Be-

cause when you compare scientific to pre-scientific approaches, there's one clear winner over and over.

What actions should IT managers take to ensure they prove valuable in their organizations as leading drivers of the transition to the "scientific" Intelligent Enterprise?

IT leaders can do two important things. First, they can explain to their business-side colleagues both why and how information technologies are changing the company and competition—in other words, how enterprises are becoming more scientific thanks to technology. Second, they can help their colleagues make important decisions by presenting and explaining available options and making recommendations. The technology landscape is constantly changing, and is alien and confusing to lots of executives. IT leaders can help them by presenting technology options, discussing them in business terms, and essentially reducing a seeming infinity of tech choices down to a small set of business decisions.

A lot has been said about IT's unique span-the-silos role in organizations. What business benefits have you seen result from IT-driven increased collaboration among business units (or among business roles)?

As one former CEO of a tech giant told me: "If only we knew what we know, we'd be three times as productive." When work takes place only within silos, there's going to be a lot of redundancy and waste.

It's also going to be hard to locate the people who could be good colleagues—who could solve a problem, answer a question, make an introduction, etc. The IT function is responsible for the only corporate asset that spans the entire company: the technology infrastructure. So IT leaders should absolutely be in the vanguard of those driving better collaboration. They should be spreading the gospel that a more collaborative application is a more productive organization, and helping a company to know what it knows.





SCO: So die already!

ANOTHER SHOE has dropped for the SCO Group — this makes about a dozen — but when will this outfit go away?

First the SCO Group sues IBM for billions in a case related to alleged intellectual property infringement, and then it starts threatening Linux and Linux users. Then, after Novell says that the SCO Group does not have the rights needed to sue and threaten, it goes ahead and sues Novell anyway. Since then it has been mostly downhill for the SCO Group.

After enriching many a law firm, part of the case finally made it in front of a judge. That judge ruled that the SCO Group had no clothes, nor did it have the rights to Unix.

The SCO Group did not die. Instead, it appealed and got a reprieve, and a jury trial. The jury agreed with the first judge about the lack of coverage but the SCO Group still did not die and appealed again. Now the judge hearing the appeal has ruled that the jury (and the first judge) got it right and that the SCO Group has nothing to hide behind. Will The SCO Group take the hint this time and die already? Stay tuned.

The whole saga has been covered with remarkable tenacity, accuracy and clarity by Pamela Jones at Groklaw.

The SCO story was never about obtaining just rewards for hard work or about protecting SCO's intellectual property. The SCO Group wanted billions of dollars from IBM for work that, assuming all of the SCO Group's claims had been accurate, SCO only spent a few million dollars developing and were only able to realize a few million from its own products. A thousand to one or so return on investment is, by any

rational, a bit more than a just reward.

If it had been about protecting intellectual property the SCO Group would have told the world what property had been stolen and the open source community would have quickly stopped using it.

It is quite clear that the leaders of the SCO Group had developed a business strategy of trying to get the courts to help extract "exorbitant fees". SCO's leaders were willing, maybe even eager, to destroy the open source culture to enrich themselves.

You might think from the above diatribe that I am against all enforcement of intellectual property, but you would be wrong. I do find it a distortion of justice that a company can spend hundreds of millions of dollars developing a game-changing product and have it copied a few months later by other companies who have nothing original to offer society. I also find it counter-productive for inventors to not be reasonably rewarded for actual inventions.

The SCO Group showed what can go wrong when some types of people use intellectual property rights (IPR) as a weapon in a lawyer-rich (or is that rich-lawyer) world. But the excesses of the SCO Group must not obscure the fact that there are wronged intellectual property holders who should be made right.

Disclaimer: Harvard has IPR (including IPR on a mouse) so is likely to have an interest in this topic. But I do not speak for the university, nor do I know what it would say if it spoke for itself.

Bradner is Harvard University's technology security officer. He can be reached at sob@sobco.com

► Data center, from page 16

and vendor offerings are different enough to make decisions challenging. Kerravala says the choices vendors offer are more different vendor-to-vendor than they have been for past technologies. "It's unlike what networking has been for a long while — Cisco led and others were either cheaper or faster," he says.

Enterasys hangs its data center strategy on well-known partners, but anchors it on its own switches and the ability to manage based on preset policies.

This means it relies on interoperability with virtualization software from vendors including Citrix, Microsoft and VMware, as well as server and storage vendors including Dell, HP and IBM. With input gathered from these other vendors, Enterasys will support visibility into data center functions as well as set automated policies. These policies can allocate better access to priority applications as determined by business needs.

The plan will be fleshed out over the coming months, including the specifics of the partnerships that will make it fly, the company says.

Key to the Enterasys architecture is the ability of its S-series switches to authenticate applications and apply policies to them regardless of the port they connect to. These policies can include factors such as QoS, bandwidth and access control.

Brocade's approach, called Brocade One, relies on a virtual access layer (VAL) that

links typical data center resources where they reside via software rather than via physical deployment and proximity. VAL imposes QoS policies. A second component is called virtual cluster switching (VCS), which enables managing the virtual switch as a single logical Ethernet multipath switch that is lossless and low-latency. The goal is to support IEEE standards for virtual bridging.

As virtual machine topologies form to meet demand, VCS makes sure that each VM gets the appropriate port profile regardless of where the VM is located.

Brocade hardware announced this month relies on a new operating system called Brocade Network OS (BNOS), which can converge Fibre Channel and IP onto a Linux core.

Meanwhile, Cisco, HP and Juniper all announced their strategies earlier, but each has its own variations. Cisco's Unified Computing System (UCS) creates a well-integrated environment of virtual servers, storage, applications and networking with some reliance on support from vendors including EMC, Microsoft, VMware and Novell.

UCS relies on a data center fabric that can handle storage-area networks, network-attached storage and iSCSI, creating opportunities to save costs by reducing provisioning time, more efficient management and reduced power costs.

Cisco plans to sell UCS as a system, locking customers in to the vendor for more of their

data center infrastructure. That may not be much of a concern, Nolle says, based on recent surveys by his company. "Enterprises are less interested in best-of-breed than they used to be," he says. "They're more interested in having a single point of contact."

The reason for the shift is that despite black-box performance testing of individual devices, the performance differences in the real world are not noticeable, he says. The bigger draw for customers is if a vendor addresses high-level architectural issues effectively, he says.

Juniper has also been in the data center game for a while and in February announced its Stratus project with other vendors to blend management, storage, computing, switching, networking and appliances. The company is focused on cutting latency tenfold, boosting reliability and beefing up virtual security.

HP, with its purchase of 3Com, has many of the elements needed to upgrade data centers, Kerravala notes. With its roots in Asian markets, the company can be expected to develop its own technologies rapidly as needed and at a low price, he says.

In evaluating vendors, the major issues decision-makers should address include: How does cloud/virtualization fit in? What are the effects on operational costs and support? How significant is real-time communications within the data center? How compatible is the data center with a multi-vendor environment? ■

TOOLS

Wikipedia in your pocket

Many people are dismissive of Wikipedia. For example, in 2005, as quoted in the Ideas in Action blog, Robert McHenry, a former editor-in-chief of the Encyclopedia Britannica, argued: "Many revisions, corrections, and updates are badly done or false. There is a simple reason for this: Not everyone who believes he knows something about Topic X actually does; and not everyone who believes he can explain Topic X clearly, can."

Even so, from various comparative content reviews such as the one that was conducted by Nature.com in 2005 (as reported on Arstechnica) it would seem that the error rates of Wikipedia and Britannica were remarkably close, with Britannica only slightly in the lead: "Working from a statistically small sample of 42 randomly chosen science articles... Wikipedia had 33 percent more errors, with 162 'factual errors, omissions or misleading statements,' as compared to 123 for Britannica. In terms of egregious errors involving inaccurately explained concepts or misinterpretations of data, the experts found four instances in each of the two encyclopedias."

The takeaway from all this wrangling is that no matter what 'pedia you use, you always have to cross check your sources.

Whether you love it or hate it, Wikipedia is immensely useful and its scope, currently some 3,322,838 articles, makes it about 15 times larger than Britannica. It is also a crucial resource when it comes to answering trivia questions. (Read more about Wikipedia, page 41.)

Better yet, it is convenient. For example, sometimes going online to resolve a crucial

issue such as the birthday of Led Zeppelin's Jimmy Page (Jan. 9, 1944) or what is the more usual name for the West African primate called the "softly-softly" (the "potto") is just too much aggravation or impossible if you happen to be in the middle of the Kenyan rain forest. This is where the WikiReader from Openmoko might be extremely useful.

No matter what 'pedia you use, you always have to **cross check your sources.**

At just 4 inches square and 3/4 inch thick and weighing next to nothing, this dedicated device is tiny. Its two AAA batteries will last for months and its monochrome, touch-sensitive screen is not bad at all even in daylight.

What's interesting is that the WikiReader has just four buttons: Power, search, history and random (I could live without the "random" button).

When you press "search" you get an on-screen key-

board to enter your search text (this is a little on the small side so those of us with fat finger syndrome have to be careful) and as you enter each letter a list of matches appears giving you a clue about possible hits... nice. When you see a result that looks like it fits your query, you just press the on-screen

► See **Gearhead**, page 27



Mark Gibbs' Gearhead

IT asked and answered

Ron Nutter and Steve Blass tackle your tough tech questions at tinyurl.com/yg2o434

Can you tell me what is the best site for Cisco certifications exam training.

➔ There is no one site that is the best for Cisco certification info. The one I would start with is <https://learningnetwork.cisco.com>. You will find a host of forums targeted at each of the certifications and/or exams. You will also find several study groups where you can ask questions. As you go into the different forum areas, you will also see documents being posted that go into more detail on some of the areas that the various books available don't cover in the kind of detail you need.

I'm making the move to a MacBook Pro. One of the challenges is what program to use for console access to Cisco gear. Because the MacBook also doesn't have a serial port, I know I'll need to use some type of USB to Serial converter.

➔ Let's tackle the USB to Serial Converter question first. Although there are several models to choose from, I have been pleased with the Keyspan USA-19HS USB to Serial converter. It handles all of the RS232 handshaking you'll need to work with. Depending on when you got your MacBook Pro, you may be running Snow Leopard. If that is the case, you'll want to download the latest drivers from Triplite's Web site instead of using the drivers that come on the Keyspan CD. Next the application to use. If you just need basic serial console access, I have been most impressed with CoolTerm. You can download the applica-

GADGETS

GoFlex, MyDitto offer easy NAS setup

THE SCOOP

GoFlex Net

by Seagate, \$99.99 (with-out drive; GoFlex drives sold separately)

► **What it is:** Part of Seagate's new GoFlex line of products, the Net is a network storage device that replaces the company's DockStar unit. The Net is a docking cradle that supports connections of two GoFlex portable drives. The dock plugs into an open router port. Access to the network for each PC is provided through the Pogoplug application, which you can download from the Pogoplug (and Seagate) Web site. You can also access the drive from any Web browser.

► **Why it's cool:** The portability of the GoFlex drives means you can easily take the drive out of the Net device when you want to go on the road with your files, and it supports expandability very easily, since it utilizes portable external drives rather than tougher-to-install hard disk drives. A Pogoplug app supports the iPhone, BlackBerry and Android devices, letting you access music and photos from your phone.

The GoFlex system lets you connect USB 3.0 or FireWire 800 cables for faster copying. This means you can put all your files on the drive quicker than transferring to a bulkier network-attached storage (NAS) via Wi-Fi. You can expand capacity by attaching other USB external drives (even ones not from Seagate). Social site support (Facebook, Twitter, MySpace) is cool: You can share photos directly from the drive to these sites rather than uploading them to the site. On Facebook, for

example, when you share a photo, a post goes on your Wall with a link allowing friends to view the photo from your drive.

► **Some caveats:** No iTunes streaming (boo!); Social network connections didn't work with Google Chrome browser.

► **Grade ★★★★★ (out of five).**

THE SCOOP

MyDitto storage server

by Dane-Elec, about \$185

► **What it is:** This box contains two slots for a hard disk drive, and connects via Ethernet cable to an open port on your home router. When you connect to the router and power up the box, it becomes a NAS drive for your network, capable of storing files. The drive can also act as a streaming media player for iTunes or any other UPnP media player/device on the network.

► **Why it's cool:** Client access to the MyDitto box is unique — instead of installing an application on the PC, users connect a MyDitto USB key to their PC, which loads up the application that shows the drive's contents (users need a password to access the drive). When the USB key is removed, all traces of the NAS are gone (save for any files that the user copied from the drive to the local PC). Not only is it easy to install on each PC or Mac, but the USB key makes it good for traveling, when you want to access files via a business center PC or an Internet kiosk. Multiple USB keys can be created for other users to access the drive as well, and if you lose your USB key, you can reset the system and create new authentication keys.

► **Some caveats:** A couple of bugs froze the app when trying to access the drive across the Internet; iPhone app can only view photos.

► **Grade ★★★★★**

Shaw can be reached at kshaw@nww.com.



Keith Shaw's Cool Tools

tion from <http://freeware.the-meiers.org/>. Depending on what other serial devices you'll be accessing, you may need to tweak the configuration slightly. You also have the option of using the Console program that comes with every Mac. Natively it doesn't know how to access the USB adapter you will be using. A little searching via Google or your favorite search engine will show the AppleScript needed to get this to work. I have tried this but haven't always gotten the results I was expecting. This same apple will also let you telnet or SSH to any of your network devices. If you are familiar with SecureCRT or a similar Windows program, there are a couple of options you can consider. ZOC/Pro provided a tabbed approach to accessing multiple devices that I was used to with SecureCRT. Another terminal app I found for the Mac is MacWise. Like ZOC it allows you to access hosts via Serial, Telnet or SSH. A downside was when the MacBook went into "sleep" mode, the USB converter didn't always respond.

► **Gearhead, from page 26**

entry with your finger to display the related content. Dragging up and down with your finger scrolls the content — completely intuitive.

Priced at just \$99 the WikiReader can be updated, at no charge, by copying the latest content release to the micro SD card or, for the low price of just \$29, you can receive two updates per year pre-loaded onto micro SD cards.

What would improve the Wiki Reader? The next level up would be graphics, after which it would be audio then video...all of which is asking for a lot of additional technology that would push up the price considerably.

I love this device as it is and this is what I want in my rucksack if I'm ever stuck in the Kenyan rain forest with a primate identification problem. As unlikely as that may be, I'll give the WikiReader a rating of 4.5

Gibbs lives near the desert in Ventura, Calif. Send your jungle drums to gearhead@gibbs.com.

GoFlex Net cradles two GoFlex drives





CLEAR CHOICE TEST: NETWORK ACCESS CONTROL

Cool NAC tools deliver endpoint protection

We test 12 solid products; each with its own variation on a theme

BY JOEL SNYDER

Despite the fact that network access control hasn't yet lived up to its initial promise, NAC is very much alive, as evidenced by the fact that 12 vendors participated in our NAC test, including industry leaders Microsoft, HP, Juniper, McAfee, Symantec and Alcatel-Lucent.

We tested each product on the key pieces of any full-strength NAC solution: authentication, access control enforcement and endpoint security posture checking. We found 12 great products that were so different in the way they accomplished NAC that it was impossible to do a head-to-head comparison.

We did find products that fell into similar buckets. For example, if you were thinking of buying ForeScout CounterACT, you should also be looking at Trustwave NAC. If you were considering Avenda eTIPS, you definitely want to take a look at Juniper UAC.

Other products worked best if you already have that vendor's gear. HP ProCurve Identity Driven Manager is a great solution — but it really only works well in an HP environment. If you already have Symantec Endpoint Protection suite, you'll find its NAC solution a fantastic complement. The same is true with McAfee.

If you're looking for products not tied to specific hardware, the list includes Avenda eTIPS, Bradford Network Sentry, ForeScout

CounterACT, Microsoft NAP and Trustwave NAC.

And you could certainly make good use of Juniper UAC or Enterasys NAC without any Juniper or Enterasys equipment in your network. Even Cisco's NAC Appliance and Alcatel-Lucent's Safe NAC could work with non-Cisco and non-Alcatel-Lucent switches.

We don't have a final answer on NAC. The product lines are growing and maturing, and many of the hard parts of NAC are moving into infrastructure, including switches, routers and user operating systems.

But you will always need other pieces to make your NAC solution complete — endpoint device profiling, policy management systems, and captive portals are all important parts of a NAC solution that you won't find built into your favorite switch or operating system.

To help you determine which NAC product is right for you, we sliced and diced our test results two ways — by product and by feature. In this report, we review each product, describing how it works and some of the key pros and cons. Go online (see <http://tinyurl.com/294lsco>) to learn how we tested the products, and for our test results broken out by specific features. Online, we also discuss our results from testing the management toolkit of each product.

And although we don't have a traditional scorecard, we do have some favorites.

Because we're looking at NAC from a security point of view, approaches that leverage 802.1X well seem like good solutions to us. That puts Avenda eTIPS, Enterasys NAC and Juniper UAC on our short list. HP ProCurve Identity Driven Manager is in the same category, but will really only be interesting to HP shops.

Microsoft NAP, which leverages the client built-in to Windows, is an obvious winner, as is any solution that lets us build on what we get for free from Microsoft.

Some products seem to be still trying to figure out what they want to be and how they want to operate, such as the Alcatel-Lucent/InfoExpress alliance and Cisco NAC Appliance. That doesn't mean they don't work, but you should be prepared for change if you go down either of those paths.

Bradford Network Sentry, the grand old man of the NAC business, certainly worked fine in our testing, but at a level of complexity that will be overkill for many well-structured networks.

Some products seem like they need a bit of time to settle down and work out a few kinks, such as McAfee's N-450 NAC Appliance. We have doubts about the scalability and approach taken in ForeScout CounterACT and Trustwave NAC. These products might be better suited to branch offices and small networks.

Here are the product-by-product results.

(Notes on pricing: Assumes 1,000 users or end devices.)

Alcatel-Lucent/InfoExpress combo needs better integration

PRODUCT: Safe NAC

PRICING (1,000 USERS): Roughly \$44,500

STRENGTHS: Strong endpoint security checking, complete NAC solution.

WEAKNESSES: Confusing array of configuration and management options.

Alcatel-Lucent submitted their OmniSwitch switches, OmniAccess wireless controllers and OmniVista management tool, plus InfoExpress' CyberGatekeeper endpoint security system.

Together, the two vendors offer a complete framework and a wide set of hardware options. The result is interoperable parts that network managers can combine to give different types of NAC enforcement in different network topologies.

The most important characteristic of the Alcatel-Lucent NAC strategy is a heavy focus on endpoint security checks, which are only loosely coupled to optional authentication and group information.

However, because Alcatel-Lucent and CyberGatekeeper are each stand-alone NAC products, the options for enforcement and policy creation are dizzying and confusing.

CyberGatekeeper can be installed on Windows or Mac clients, and returns a "pass" or "fail" verdict that can be used as part of an access control decision.

Alcatel-Lucent's Access Guardian management software is used to define NAC policies, which are then pushed out to Alcatel-Lucent switches that enforce access controls. Although Access Guardian supports access

control lists for enforcement, the definition mechanism is so clumsy

Alcatel-Lucent Omni switches

that most enterprises will probably use virtual LAN-based enforcement mechanisms instead.

Acknowledging that it doesn't have a significant percentage of the network switch market, the team that visited our lab demonstrated both edge enforcement with Alcatel-Lucent gear, as well as an Alcatel-Lucent switch sitting behind our existing Cisco, HP and Juniper switches, providing Layer 2 in-line NAC enforcement at the network core.

The components offered by Alcatel-Lucent and InfoExpress do check most of the boxes required for a NAC deployment. However, these pieces form more of a do-it-yourself kit than an integrated NAC product.

Avenda offers full-featured NAC

PRODUCT: eTIPS 5005

PRICING (1,000 USERS): \$22,000 to \$40,000

STRENGTHS: Simplicity, ease of use, well-balanced NAC features.

WEAKNESSES: Relies on 802.1X authentication, which some customers may be wary of.

At its core, Avenda's eTIPS is a RADIUS server specifically designed for NAC authentication and access controls. Avenda gives authentication, endpoint security checking and policy enforcement equal weight, making eTIPS a very well-balanced NAC product.

Because eTIPS is focused on NAC functionality, it's not just a simple RADIUS server. Instead, the Avenda team has added a ton of features specific to NAC deployments.

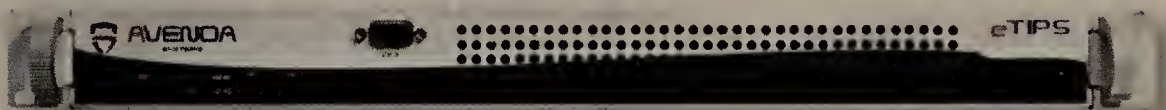
Although eTIPS takes some getting used to, the Web-based GUI is focused on NAC tasks, making it relatively easy to use with only a couple of days practice. ETIPS is not a simple product, but it's about as simple as it can be and still covers all the bases.

Avenda is aware of the fear factor associated with 802.1X, so it also offers a cloud-based service called Quick1X that can be used to automate deployment of 802.1X across Windows, Mac and iPhone devices. With Quick1X, the network manager creates a deployment application based on his own network and relevant operating system settings, then downloads the application and distributes it to users, who can use it to quickly and reliably set up

their 802.1X configurations.

ETIPS also includes the ability to do posture checking by actively scanning devices as they come on the network, or by interpreting posture information from endpoint security software. ETIPS supports its own system health agent, Microsoft's NAP agent, and Cisco's CTA agent. It also includes a very full-featured guest login and registration portal that integrates properly with network devices — an unusual feature.

Avenda even has a dedicated in-line appliance, called Edge, which can be used in environments such as simple wireless networks and VPNs where traditional 802.1X-style authentication might not fit in.



As one of two vendors exclusively focused on NAC, Avenda has done a great job of bringing a policy server and all the associated pieces required to successfully deploy NAC in a typical enterprise network.

Bradford best for complex, multi-vendor sites

PRODUCT: Network Sentry

PRICING (1,000 USERS): \$32,460

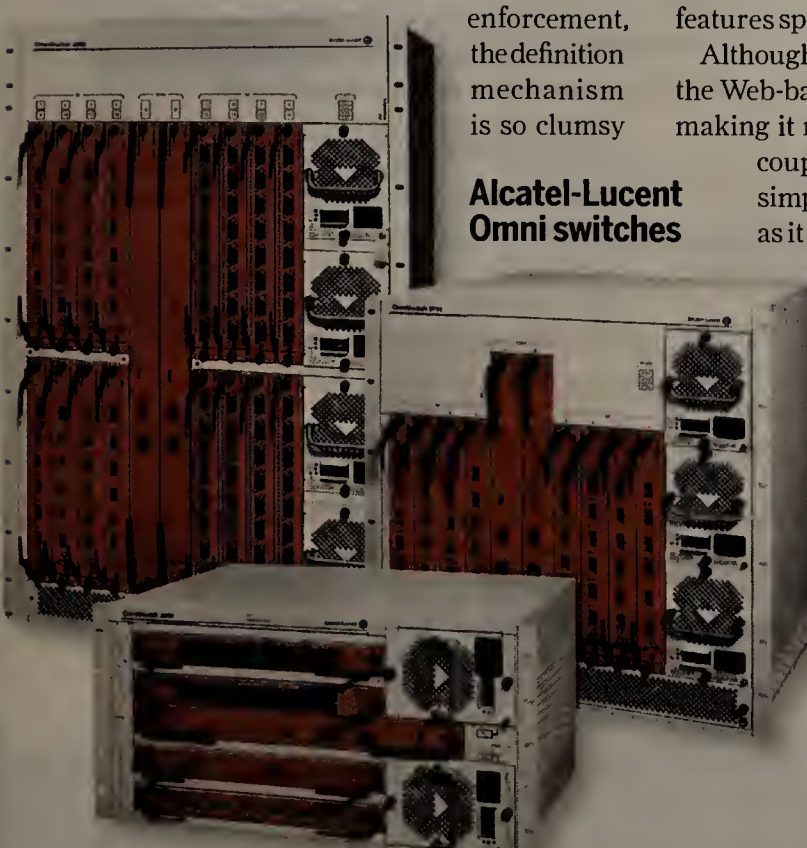
STRENGTHS: Excellent for complex, multi-vendor environments, such as a college campus.

WEAKNESSES: Complex, difficult to install.

With over a decade of experience doing nothing but NAC, Bradford brings an immense amount of corporate knowledge to the NAC marketplace. As the dominant supplier of campus-wide NAC to the education market, Bradford's approach has strong supporters in environments where heterogeneous device deployment (two dozen wired and wireless device vendor product lines are supported) and hostile users are the norm.

Network Sentry has several deployment models, but the most common is based on edge device enforcement of access controls, typically using VLANs. Using a combination of SNMP and command-line interface, Network Sentry detects devices coming onto the network and then walks each device through registration, authentication and compliance checking, before finally pushing a configuration that lets the device onto the network. Network Sentry also supports 802.1X authentication, but did not encourage its use.

The Network Sentry family also includes endpoint security checking via either an on-network scanner (built-in support is included



for Nessus) or the Bradford client on Windows, Mac OS X and Linux. A guest registration and login portal is available as an option, as is a network scanner, which can be used to discover device types and build a database of devices on the network.

Unfortunately the product has grown over the years with patches, plug-ins and an enormous number of add-ins to support the unique requirements of its huge customer base.

We found it hard to understand, poorly documented, difficult to manage, inconsistent in its behavior and with no clear way for someone to deploy the product without considerable third-party help.

Cisco NAC: Strong in-line enforcement

PRODUCT: NAC Appliance

PRICING (1,000 USERS): \$36,000

STRENGTHS: Powerful NAC for wireless and VPN environments.

WEAKNESSES: Limited tools for fine-grained access control.

The two components of Cisco NAC Appliance are the NAC Manager, which controls policy, and the NAC Server, which responds to user traffic and enforces policy.

NAC Appliance can act either as a purely in-line or as an edge-enforcing NAC solution. Each NAC Server only operates in one of those two modes. When in-line, the NAC Appliance filters user traffic, applies access control policies, and checks endpoint security status. In-line mode is recommended by Cisco for wireless and VPN environments.

When the NAC Server is put into edge-enforcing mode, it uses SNMP to manage VLANs on Cisco switches. Before a device is posture-checked and authenticated, the NAC Server can put itself in-line and present a captive portal for authentication and to push the Clean Access Agent (an endpoint security checking tool) to Windows and Mac OS X clients.

Once authentication and posture checking are complete, the NAC Server sends SNMP configuration commands to the edge switch to enforce access controls by moving the user to an appropriate VLAN.

NAC Servers also support less intrusive authentication and posture checking options, using authentication information captured from network traffic and using a persistent endpoint security agent.

NAC Appliance is mostly focused on authentication

➔ Go online as Joel Snyder analyzes 12 NAC products feature by feature, including authentication, endpoint security checking, access control and management. Also see how he tested these NAC products. Plus go online for a slideshow distilling the comprehensive testing results in quick thumbnails. tinyurl.com/294lsco

and endpoint security checking; the tools for defining network access controls, especially when edge enforcement is being used, are very limited in scope. Some common features of NAC products, such as direct support for MAC-based authentication for VoIP devices or printers, are not built into the NAC Appliance. Instead, Cisco expects that you will use features built-in to its switches.

However, Cisco does sell its NAC Profiler, an OEM version of Great Bay Software's Beacon product line, which integrates tightly into the NAC Appliance, and helps to build exception lists for devices (such as VoIP phones or printers) to simplify NAC rollout.

Cisco also offers a packaging of the NAC Appliance Server in a small Network Module that can be placed in its ISR branch router product line.

This makes deployment based on the NAC Appliance easy in environments where an extra server is a big deal. While Cisco's overall NAC strategy is in flux, a NAC Appliance investment is likely to come with substantial purchase protection.

Enterasys NAC: Put it on your short list

PRODUCT: NAC v3.2

PRICING (1,000 USERS): \$30,000

STRENGTHS: Ease of use, well thought out, strong feature set.

WEAKNESSES: Minor management flaws.

The Enterasys NAC solution is a combination of hardware and software that provides NAC services in both Enterasys and non-Enterasys networks. Enterasys NAC starts with a NAC Manager, a management system built on top of the Enterasys NetSight Manager platform. NAC Manager is used to control NAC Appliances, which themselves come in two types: NAC Controller appliances, which are in-line NAC

enforcement devices, and NAC Gateway appliances, which are essentially RADIUS servers with very NAC-specific feature sets.

We tested Enterasys NAC in its edge-enforcement mode, using a single NAC Manager and single NAC Gateway to control our Cisco, HP and Juniper switches. Enterasys also sent us one of its switches, which we threw into the mix. Our testing focused on 802.1X-type NAC deployments, and the Enterasys NAC was both easy to deploy and performed well.

As we expected with any mature NAC product, we found our fair share of ambiguities and design flaws in the management system. Still, the NAC Manager ended up being fairly easy to use.

Enterasys has a broad product line, including captive portal functionality, guest registration and the ability to accept external security inputs to mix into the NAC decision-making process.

We also found some particularly elegant thinking in the Enterasys NAC product. For example, Enterasys NAC uses

DiffServ packet tagging and policy-based routing to force unauthenticated users to its captive portal, a very clever solution that avoids the problems associated with changing user VLANs on the fly.

Obviously, Enterasys NAC works best with their own switches. But we were able to push both VLAN and access control lists to all of the non-Enterasys switches in our network very easily.

Enterasys NAC also includes the usual endpoint security checking features. Both an on-network scan using Saint Corporation's network scanner, and an on-device scan using the Enterasys agent, are supported.

Enterasys has done a good job making sure that its NAC product works very well in non-Enterasys networks. Because Enterasys NAC has both in-line and edge-enforcement technologies in a single product line, we think that this is a definite short-list for any 802.1X-based NAC deployment.

ForeScout focuses on network visibility

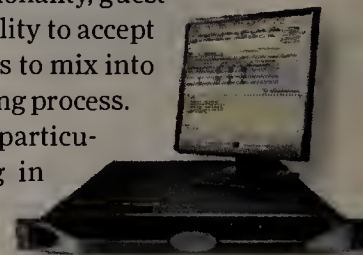
PRODUCT: CounterACT Appliance v6.3.3

PRICING (1,000 USERS): \$28,995

STRENGTHS: Endpoint-centric, provides excellent network visibility.

WEAKNESSES: Scalability concerns, weak authentication.

ForeScout's CounterACT has a very different take on NAC; the closest competitor is really



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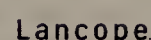
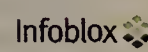
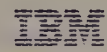
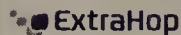
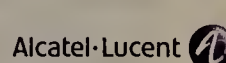
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Trustwave. In CounterACT's framework, the appliance scans network traffic to classify devices as they join the network.

And, if possible, CounterACT logs onto the device remotely to run a detailed endpoint security check. This can be done with or without an installed client. As CounterACT learns about devices, it classifies them into groups, and then evaluates rules on those groups.

If a device in a group does not match the rules for that group, then CounterACT can take action. CounterACT also includes a guest portal capability. When rules require that a user be redirected, the CounterACT system will send out TCP reset packets and attempt a "man-in-the-middle" redirect.

In our small test network, CounterACT worked pretty well. Because it does not normally use standards such as 802.1X, it has to be very intelligent about every device on the network, which is a touchy issue. For example, when we tested with our Aruba wireless controller, which was supposed to be supported, ForeScout had to get its development team involved to make things work, since the latest version of Aruba's software wasn't compatible with the CounterACT software out-of-the-box.

In terms of network visibility, CounterACT was certainly the most sophisticated product in this test. CounterACT's unusual NAC strategy has other benefits. For example, if someone is classified into a particular group, CounterACT can take an action to send an e-mail to the user on that device, or perhaps to kill a running IM or peer-to-peer application.

The flip side of CounterACT's device-centric approach is that the product is not very interested in authentication information. It can detect authentication, for example, by sniffing Active Directory, but authentication information is really secondary. If you are looking at NAC to enforce different access controls for different types of users, you won't find CounterACT a very good fit.

One of the biggest concerns we had in testing CounterACT is scalability. Since the appliances have to watch all network traffic (or at least a good portion of it) to detect and classify devices, this means that you have to find good places in the network where mirroring is both possible and at the right speed. In large networks, particularly very distributed ones with a high level of redundancy, this can be difficult or costly, requiring many appliances. In addition, CounterACT does much of its magic by connecting to network devices and reconfiguring them on the fly, something many network managers will find uncomfortable.

CounterACT's guest portal functionality is quite sophisticated; what other vendors are

charging \$10,000 or more for is included as part of the basic product. The only dangerous thing about the guest portal is that it requires the CounterACT appliance to be able to inject traffic into the network to man-in-the-middle redirect. If you have firewalls scattered throughout your network, you're not going to find CounterACT very effective in this task.

HP NAC works best in HP shops

PRODUCT: ProCurve Identity Driven Manager (v3.01)

PRICING (1,000 USERS): \$10,000

STRENGTHS: Cost-effective, strong management features, strong access controls.

WEAKNESSES: Endpoint security checking, reliance on HP switches.

HP's Identity Driven Manager is an 802.1X-based NAC solution optimized to work with HP and Cisco switching infrastructures. HP starts with its ProCurve Manager Plus software, a management platform for HP switches, and adds in the Identity Driven Manager as a layer within ProCurve Manager Plus.

In a departure from most NAC solutions, ProCurve's RADIUS server isn't a server at all, but a plug-in that integrates directly to Windows' Network Policy Server and FreeRADIUS on Linux, as well as HP's own RADIUS appliance.

Because Identity Driven Manager is integrated into HP's network management tools, it brings a great deal of visibility to the whole NAC infrastructure, collecting logon and logoff information from switches, and maintaining profiles and history information on every user.

Identity Driven Manager works most naturally with Windows Active Directory, and has

a plug-in that handles directory synchronization between Active Directory and Identity Driven Manager.

To leverage HP's built-in security capabilities, Identity Driven Manager lets you define network access profiles for each user or Active Directory group. These can provide standard VLAN assignment, but also QoS profiles, rate limiting and access control lists.

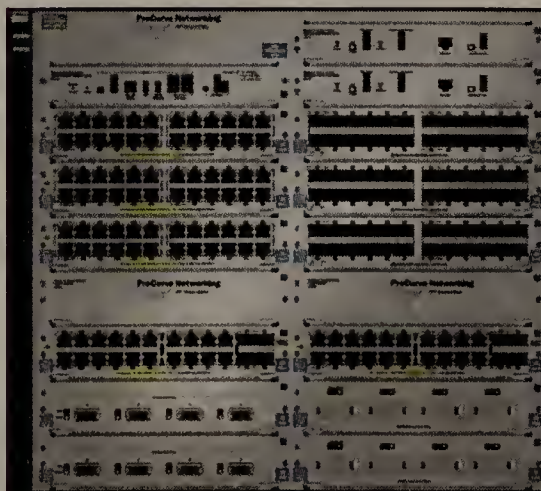
The sophistication of Identity Driven Manager's access control rules (and the simplicity of building ACLs) makes it one of the strongest solutions for a NAC deployment focusing on fine-grained access controls.

Identity Driven Manager is especially well named, because it really focuses on identity and gives very little thought to endpoint security checking. HP doesn't actually include an endpoint security checker, but it does integrate fully with Microsoft's NAP client, as well as with third-party endpoint security checkers.

HP's Identity Driven Manager depends heavily on HP switches for some NAC features that might have been included, such as a captive portal for guests who do not authenticate with 802.1X.

There is also no real support for MAC-based authentication (for VoIP phones and printers), creating a requirement for the network manager to manually separate out these devices from the NAC solution.

HP's NAC will be most attractive to existing HP switch customers. One of the advantages of Identity Driven Manager, though, is that it is simple both in concept and in management. Rather than depending heavily on magical back-door configuration of devices, Identity Driven Manager offers a simple 802.1X-based NAC solution that marries authentication, some endpoint security features and strong access controls in a very cost-effective package.



HP's NAC solution depends heavily on HP switches.

Juniper NAC: Powerful, complex

PRODUCT: Unified Access Control (UAC) v3.1

PRICING (1,000 USERS): \$42,400

STRENGTHS: Many deployment options; integration with SSL-VPN, powerful feature set.

WEAKNESSES: Complexity, works best in Juniper-based network.

Trying to describe Juniper's UAC is difficult, because Juniper's NAC strategy has its tendrils in virtually every security product the company makes, from firewalls to switches to SSL VPNs.

Juniper UAC centers around its Infranet

Controller, a hardware appliance that serves as a RADIUS proxy and server, an endpoint security checker and an access control policy manager. Once you've put in the appropriately sized Infranet Controller, though, Juniper stuns you with piles of options and flexibility. Since NAC usually starts with authentication of some sort, Infranet Controller supports three different models: 802.1X or MAC-based authentication at the edge device; a captive portal for guest or staff authentication; and authentication using the UAC client. One nice feature of UAC is the ability to mix and match all three, although doing so will likely make an unmanageably complex configuration.

Authentication can be mixed with endpoint security checks, using either the UAC client for Mac and Windows, or Microsoft's NAP client. UAC builds on Juniper's existing SSL VPN endpoint security base, so both installed clients and Web-based clients are supported for endpoint security checks.

Once users have passed authentication and endpoint security, access controls can be applied. Because Juniper encourages you to use 802.1X, it is able to push access control information down to switches at the edge. But Juniper has added hooks into its own ScreenOS and JunOS operating systems so that UAC can simultaneously push access controls into in-line devices including firewalls and many of its routing platforms.

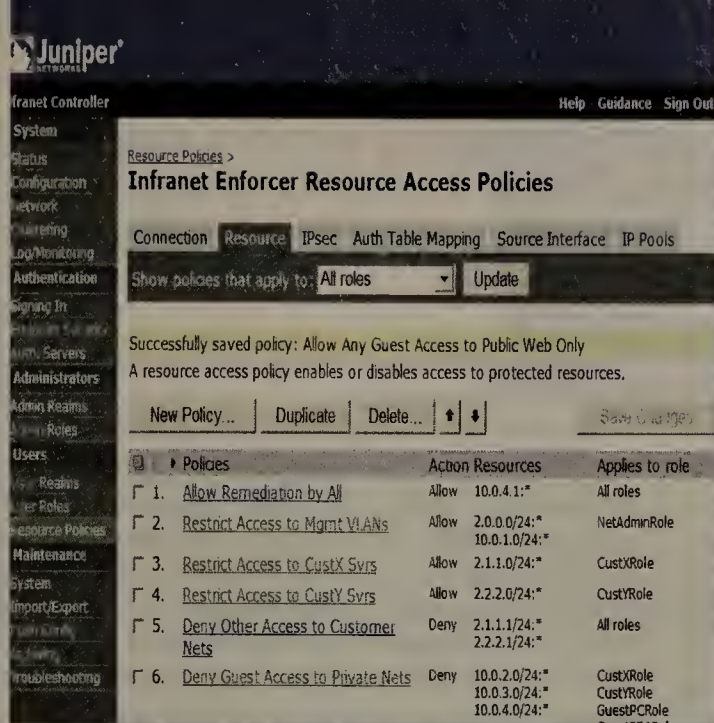
One of the nice things about this approach is that you get many of the benefits of an in-line enforcement without the performance problems. UAC is also agnostic about the location of enforcement: you can use 802.1X controls, in-line controls, or both.

Finally UAC can also push host-based access controls into network devices that are using the UAC client software.

Juniper's endpoint security checking doesn't end at the moment of authentication. Both continuous endpoint checking and external links to intrusion detection-/prevention-systems are supported.

UAC is the only product we tested that fully integrates a NAC product line with an SSL VPN product line — although the mechanism is fairly complex. Unfortunately, SSL VPNs don't inherently mix well with the mechanisms that vendors have chosen for NAC, so putting NAC and SSL VPN together seems to imply a single-vendor solution.

All of this adds up to a difficult-to-master system. To Juniper's credit, though, I spent less time debugging problems with UAC than all the other NAC devices because by the time



I figured out how to configure it, things just worked.

One big reason for this is because Juniper now includes a "Base Case" pre-configuration that pre-populates and documents UAC with common deployment strategies. Without it, no mortal would be able to figure out how to glue all the pieces of UAC together.

UAC isn't just for Juniper customers; you could use UAC to apply sophisticated NAC to a heterogeneous network of managed and unmanaged switches. It's a solid, if complex, product. However, UAC is best distinguished from the pack when Juniper's own enforcement devices are added to the network. In that case, UAC is a top contender for securing networks and endpoints with NAC.

McAfee NAC focuses on endpoint protection

PRODUCT: ePolicy Orchestrator 4.5, McAfee Network Security Manager v6, and the N-450 NAC Appliance

PRICING (1,000 USERS): \$26,200

STRENGTHS: Strong endpoint security, tight product integration.

WEAKNESSES: Fine-grained access control.

McAfee's NAC strategy rests on two separate, but tightly integrated products. The first is ePolicy Orchestrator, which is McAfee's endpoint security client management system.

ePolicy Orchestrator can report the results of endpoint security policies back to the other half of McAfee's NAC product line. That's the N-450 NAC Appliance and McAfee's Network Security Manager. When a device running McAfee's endpoint security comes on the network, the N-450 acts to enforce access control policies and endpoint security policies for that client.

The NAC Appliance and Network Security Manager can enforce NAC policies via full in-line enforcement, DHCP-based enforcement or VLANs enforced at the edge of the network, which we focused on.

In edge enforcement, the NAC Appliance starts in-line between the user device and the

rest of the network. The user authenticates to the network using their Windows login, switch-based 802.1X, or a captive portal provided by McAfee.

If the end device is running the McAfee client, and if the user is compliant with the endpoint security policy, then the NAC Appliance gets "out of the way."

You can choose to leave the NAC Appliance in-line for some users and apply more sophisticated access controls for end users such as guests who may need more watching.

In our tests, we found McAfee NAC at a crossroads. While the ePolicy Orchestrator is solid and well tested, the NAC Appliance and Network Security Manager is a fusion of McAfee thinking on NAC combined with technology McAfee acquired from Lockdown Networks.

This left a few bumpy spots in the road when it came to enforcement. Lockdown was notorious for its feature-creep and it's going to take McAfee some time to get its head around all of the capabilities inherited.

With VLAN switching as the primary enforcement mechanism, McAfee NAC is clearly slanted towards endpoint security and compliance requirements more than fine-grained network access controls. Because McAfee NAC depends heavily on ePolicy Orchestrator, existing McAfee endpoint security customers will find that adding McAfee's NAC to their networks is a very natural and easy extension.

Microsoft offers free, basic NAC for Windows-only shops

PRODUCT: Network Access Protection (NAP), including the NAP client and Network Policy Server (NPS)

PRICING (1,000 USERS): NAP client is included with all versions of Windows; NPS is included with Windows 2008 server

STRENGTHS: Free to Windows shops, built into products most enterprises already have.

WEAKNESSES: Windows-only, features are relatively primitive.

Network Access Protection (NAP) is the term Microsoft uses for a suite of enforcement mechanisms closely tied to endpoint security compliance.

NAP is based on a Windows-only client that combines endpoint security checking with optional authentication. Out-of-the-box, the Microsoft NAP client uses Windows Security Center for its health check, giving a fairly basic set of endpoint security checks — anti-virus, antispyware, firewall, automatic patching,

However, the NAP client's health check can be swapped for any third-party health checker that is NAP compatible.

Microsoft NAP will work best in an all-Microsoft operating system environment where all devices are joined to a Windows domain. In those situations, the management of the NAP client can be handled through normal domain configuration tools. Without the convenience of domain configuration, setting up Microsoft NAP can be complicated, although there are third-party vendors, such as Cloudpath Networks, that have worked to make this simpler.

Even with this additional help, though, there's no real support for tools such as captive portals, guest management and MAC-based authentication within NAP.

Network Policy Server (NPS) is a RADIUS server, which gives NAP the ability to operate in an 802.1X environment with network edge enforcement. Although NPS does have generic RADIUS capabilities to deliver VLAN and ACL information to switches in an 802.1X scenario, the facilities to manage these settings in NPS are fairly primitive, which makes it really only suitable for VLAN assignment as an access control enforcement technique.

However, NAP and NPS can enforce access controls through other mechanisms. DHCP-based enforcement (assuming you are using Microsoft's DHCP server) is still available. Microsoft's own VPN server (Routing and Remote Access Server) is also tied to NAP, so users connecting through RRAS can have differentiated access based on the state of their endpoint security at connection time.

And, in a pure Windows environment on a LAN with everyone playing by the same rule book, you can use IPsec.

Microsoft's NAP is certainly not the most functional NAC solution we tested, but it has a huge advantage over every other solution: it's built-in to Windows. Savvy network managers will look for ways to work around NAP's weaker spots, while taking advantage of the strong parts of the architecture, such as the built-in client and easy integration with Windows.

Symantec NAC: Easy to install, strong on endpoint compliance

PRODUCT: Symantec Network Access Control v11 (including Symantec Endpoint Protection v11)

PRICING (1,000 USERS): \$14,449 to \$48,449

STRENGTHS: Endpoint compliance, ease of use.

WEAKNESSES: Authentication, fine-grained access control.

Symantec NAC is all about compliance: ensuring that devices on your network properly comply with the endpoint security policy you set in your Symantec Endpoint Protection console. Symantec NAC isn't about authentication or access controls beyond basic VLAN switching. If endpoint security compliance is what you want, and if you're already a Symantec shop, then this is a great product for you.

Symantec NAC includes its standard endpoint protection suite for desktops, and one or more appliances that act as enforcers for NAC policy. When you first configure an enforcer appliance, you tell it whether to be an 802.1X enforcer, a DHCP enforcer, or an in-line gateway enforcer that applies packet filters to the traffic flowing through it.

The strong point of the Symantec NAC product is endpoint security, but there are other features, such as a simple guest portal (if you have a gateway enforcer) with on-demand endpoint security scans, which also includes support for MAC-based authentication (for VoIP phones and printers).

Symantec NAC includes support for VLAN assignment in Cisco wired and wireless switches, Alcatel-Lucent, Foundry, HP, Nortel and Extreme switches, as well as Aironet wireless controllers.

We found Symantec NAC easy to install and manage. If you have Symantec Endpoint Protection installed, and if endpoint security compliance is your main reason for investigating NAC, then you'll find Symantec NAC an inexpensive way to add NAC.

Trustwave NAC : Deployment is a snap

PRODUCT: NAC v3.4

PRICING (1,000 USERS): \$30,000

STRENGTHS: Easy to deploy, doesn't require network changes.

WEAKNESSES: Reactive, best suited for small offices, branches.

Trustwave NAC is the ultimate "zero touch" NAC product. It doesn't need to know anything about your infrastructure; it doesn't require that you implement 802.1X. To use Trustwave NAC, you put it in a position to monitor traffic on each of your network segments. Then, to enforce access controls, Trustwave NAC

injects packets into the network, which cause it to become a "man-in-the-middle," presenting a captive portal and providing endpoint security scanning software. When a workstation has passed both authentication and endpoint security requirements, Trustwave NAC releases its hold on the device and traffic flows normally.

Although the documentation on Trustwave NAC can best be described as "dismal to awful," the product is fairly easy to understand and to configure. For example, if your NAC policy says that someone must not be running an FTP server, then the Trustwave NAC appliance port scanner will look for FTP servers. If you don't have FTP servers in your policy, then they won't bother to look for them.

Normally, LAN users authenticate indirectly into Trustwave NAC. If you have 802.1X, or if users log in via Active Directory, then Trustwave NAC can detect this and will assign credentials to the device. For guest users who do not log into a domain or use 802.1X, Trustwave NAC will redirect the user to a captive portal which can be used for both authentication and endpoint security checking.

Trustwave NAC tries to be as unobtrusive as possible. A combination of network monitoring and active network-based scanning are used to detect the status and state of each device on the network.

This makes it more of a reactive product than a proactive product, in the sense that it will detect bad behavior when it occurs but not necessarily help in managing compliance.

Trustwave NAC does not require active changes to the network, a huge benefit. While this comes with some restrictions, such as a weaker endpoint security host checking model, it also will be attractive to many network managers, especially in smaller sites, where network changes are difficult.

However, Trustwave NAC's strategy of tricking the network by poisoning ARP caches and injecting TCP packets might send chills down the spine of a network manager. When you can't trust basic troubleshooting

tools such as Ping and Traceroute or the predictability of the TCP state machine, you're opening up the potential for small network problems to become un-debuggable nightmares. On the other hand, for small, well-behaved networks such as at branch offices, this concern might be overstated.

Snyder is a senior partner at Opus One in Tucson, Ariz. He can be reached at Joel.Snyder@opus1.com.



Cloud: Public or Private?

Don't compromise on security



Dave Malcolm is CTO at Surgient

A PRIVATE CLOUD IS THE clear choice for enterprise and government organizations looking to reap the benefits of cloud computing without compromising critical security policies or overall system flexibility.

Organizations that are able to closely align IT initiatives with core business strategies are more agile, more responsive and more effective than their peers. But the accelerating user demand for infrastructure, coupled with ever-present restrictions on IT budgets and staff, has created a dilemma: How do you cost-effectively scale operations while staying aligned with the core business?

The obvious solution is to transition to a cloud-based infrastructure delivery model: the promise of better utilization, higher productivity and truly dynamic IT is impossible to ignore. While some public cloud options look attractive, a private cloud is the way to go. Here are some things to consider:

- The private cloud lives within your firewall and gives you control over your data: who has access, where it lives, and how it's transferred. Organizations that deal in private and proprietary data (e.g. financial services, healthcare, and government institutions) simply cannot risk third-party access to sensitive data, and even face legal ramifications for breaches.

John Merchant, assistant vice president of the Hartford Financial Services, was recently quoted as saying, "as a Fortune 500 company with highly regulated data and a very conservative outlook, it's going to be difficult for any insurance company or any financial institution of any size to migrate any data to the [public] cloud." Public cloud offerings simply aren't able to adequately address the security and privacy needs of data-sensitive organizations.

- Private clouds offer a way for these organizations to transition existing data center investments into a more scalable, user-friendly model while maintaining control over data.

- The private cloud is a "force multiplier". Enterprise and government organizations have already made investments in large data centers with thousands of servers, supporting infrastructure and management software. Clearly, these investments will not be retired

► See **Private**, page 38

Public gives you greatest return



Siki Giunta is the global vice president of cloud computing at CSC

GIVEN THE IMPACT PUBLIC CLOUDS have had on consumers and society, it's no wonder businesses are trying to match this level of agility with their internal infrastructure. I often hear enterprises lament: "I wish I could deploy Amazon's EC2 internally for my private cloud."

They envy the readiness of on-demand execution, the fluidity and elegance of systems delivery. It is a sense of freedom from the constraints of traditional IT.

But replicating public cloud services will not come easy. While organizations can strive to make IT the electricity that enables the business, there are many legacy impediments.

Enterprise IT is not ready to aggregate infrastructure in shared pools and to charge it back on usage. Infrastructure still tends to be acquired for internal customers without asking: "Does it need to be dedicated?" "How long do you need it for?" and lastly: "Who is the consumer?"

While enterprise IT is pondering the answers to these core questions, the overwhelming benefits of public cloud services will drive businesses to adopt them more quickly than not. In a highly competitive, global marketplace, businesses with the agility to respond quickest to customers have the advantage, and public cloud services allow them to ramp up and ramp down to

meet changing levels of demand in different geographies and markets.

Once business category leaders start adopting public cloud services, they will gain an advantage, their market share will grow and competitors will quickly follow.

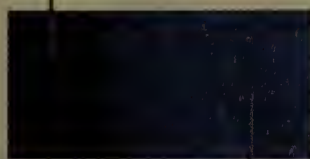
Of course, the primary case against enterprise use of public clouds right now is security. While security is a challenge, there are ways to meet compliance rules and mitigate risk. Consider, for example, Salesforce.com, one of the biggest business public clouds in use today. Companies readily deliver all their customer contacts and revenue pipeline information without worrying about either privacy or commingling of data with other organizations.

The Salesforce application was built from scratch with public cloud delivery in mind: data is segregated in multi-tenancy or can be obfuscated or tagged so data resolution happens only

► See **Public**, page 38

Public vs. private

Private is the way to go because it gives you more control



Public services let you leverage the provider's investments

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► **Private**, from page 35

overnight. Rather, these organizations need a way to transform this powerful, albeit static, infrastructure into a dynamic, fully automated cloud that still conforms to existing security and privacy policies.

Private clouds provide two major benefits. The first is a dramatic increase in the utilization of existing infrastructure, which drives down costs and limits the need for future purchases. With cloud-based capacity management, administrators can increase utilization from around 40% (with virtualization alone) up to 75% to 85%, and they have detailed insight into exactly how that infrastructure is being used.

Second, because of the powerful automation engine enabling the private cloud, administrators can break the cycle of never-ending hands-on provisioning and reclamation to focus on strategic functions, such as IT service design and policy management.

■ The private cloud offers clear ownership and accountability. What's the game plan when something goes wrong? With a public solution, you'll be dealing with both internal owners and likely multiple external owners to resolve the issue, which can result in confusion and resolution delays. With a private cloud, you own the cloud and can prioritize resolution based on the needs of your business, rather than someone else's.

When you add it all up, it is clear that enterprise and government organizations maintain high standards for security, privacy and cost management, while transforming their operations into a dynamic, flexible environment. The best solution for them is the private cloud. ■

Malcolm oversees software development, product management and data center operations. Surgient has built over 150 private clouds for companies like Target, GE and Bank of New York.

► **Public**, from page 35

internally within the owner's firewalls.

In fact, we have not really had a big security breach in public clouds. If any problem had occurred, you can bet the news would have spread in a matter of minutes. Meanwhile, we often hear about the loss of PCs or thumb drives containing Social Security numbers or instances of fraud executed inside the "private cloud."

That said, to ensure a secure public cloud experience it is important to know who the provider is, their profile, service excellence and history.

Public clouds are blazing the trail for enterprise IT. Realistically, it would take quite some time for private clouds to achieve the same level of usage and sophistication.

Consider, for example, what the Haiti relief effort showed us about the power of the public cloud. Without public cloud services, participating charities would have had to anticipate the demand and get pledge money to build out the infrastructure to accommodate the spike in user pledges, and then maintain it as it sat idle long after that first month's peak of generosity.

While public cloud services are proving their worth and attracting new converts every day, we will ultimately see the emergence of a hybrid public/private mix that can satisfy any lingering security or regulatory concerns about particular data. But without compromising their most sensitive data, businesses will move as much of their workloads as possible to take advantage of the flexibility and agility offered by public cloud services. ■

Giunta is responsible for implementing CSC's cloud computing strategy. She heads CSC's Trusted Cloud and Hosting Business Group, using cloud capabilities to extend the company's strength in consulting, systems design and integration.

➔ **Send Debate Suggestions** to jdix@nww.com

Private Cloud?

➔ Public clouds have some great benefits, but for the level of security that enterprise customers require I think the choice will nearly always be private. I am also yet to be convinced that there is any such a thing as a private cloud. My observations to date are that private clouds are just virtual infrastructure, not really different from any other virtual infrastructure that hasn't had the "cloud" moniker stuck on to it.

Public Cloud security

➔ Security should be a concern in public or private clouds, but I'd say a lot of talk about public clouds having no security is overblown. Many of those public cloud SP Data Centers are state of the art. They are run by talented people hired to do the job. Their physical secu-

rity is often better than most corporations. Finally, security takes many forms, including disaster-recovery planning. If you go with a private cloud, where is your DR site? Do you use a public cloud for it or pre-stage a backup private cloud yourself (\$\$). And will that somewhere else be on a separate power grid, flood plain etc. from where the first site is? There is no single right answer to the question of Public vs. Private cloud as it depends on many considerations. BRIAN MULLAN

Public clouds are already well understood, widely used

➔ Perfect! Hi Siki, can we start with CSC first and move all of CSC's internal applications to the public cloud? How about starting from the HR, Finance and legal departments. All meet your definitions...

What happens to agility when public clouds consolidate?

➔ Right now there's a gold rush proliferation of public providers. Do I avoid the public crowds and performance swings by going to boutique public providers or wait it out until there's consolidation and market stability? At least with a private now, hybrid tomorrow, public eventually model, I seem to be more protected from Darwin and Murphy's Law. ANON

Private cloud

➔ Private cloud offers much faster provisioning and cost reduction vs. a traditional physical (non-virtualized) infrastructure. The advantages are not theoretical, they are proven over and over and they are relatively easy to realize. I know because I have done it. RICK PARKER

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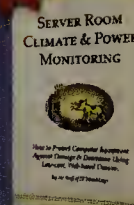
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*Indicates Regional Demographic

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BACKSPIN | BY MARK GIBBS

Sprint cell woes: your reaction

some of you didn't get: I understand the economics of consumer cellular service; what I couldn't get over was that it makes no sense for Sprint to let me go.

Before we delve into that issue let's talk about feedback: A number of you (who all appear to be called "Anon" – which strikes me as particularly wussey) chastised me for a variety of things that ranged from comparing me to Glenn Beck (one of the most bizarre critiques I've ever received) to the brain damaged "crap reporting ... how much did you get paid by the other carrier? Sprint rocks, and the EVO is the best phone on the market".

Adding the online comments to the direct e-mail I received it appears about 60% of respondents agree with me that the cell phone service providers are the devil's spawn and most likely have a special place in hell reserved for them, while about 40% disagreed. About half of the latter disagreed strongly enough to resort to name calling (my favorite was the forum response that started out calling me a moron). To this group all I can say is your mothers wear army boots.

So, back to what matters: The money. Here's the deal: My phone broke and Sprint would give me a new (low end) cell phone for \$155 if I signed up for a new two-year contract. Alternatively, they'd let me go to another carrier (where I could get a new phone for free by signing a two-year contract) if I paid \$110 early termination fee. The best deal from my perspective is obvious and involves saying goodbye to Sprint.

After my column ran a very nice chap from the Sprint executive

offices got in touch and we had a long conversation about the economics of cellular service and the nature of very large companies, but what did he get stuck on? The early termination fee. His rationale was that it was the only way Sprint could recover the cost of acquiring me. What he was ignoring was the cost of replacing me.

From a number of reports it appears the cost of "hunting" (the marketing term for customer acquisition) in the cellular business is in the region of \$120. Given that Sprint's customer churn in the first quarter of 2010 was 2.15% and the company lost 75,000 customers it would appear that customer replacement will be in the realm of \$9,000,000!

Now what's the cost of "farming" existing customers? I'd bet a lot lower than the cost of acquiring new customers. But for Sprint there's a bigger issue than just losing customers. Just search Google for negative user stories about Sprint; it lost customers and pissed them off at the same time.

Now I suppose that by me paying the \$110 to get out of the account Sprint can treat the account as profitable, but they have lost a customer in the process and what are the three key things you can do to improve your business? That's right; increase profitability, reduce costs, or make your customers happy.

In Sprint's case, the profit on my account was illusory, it will cost them to replace me, and they wound up with an unhappy ex-customer. And doesn't that sound wrong headed to you? ■

Gibbs has had enough of cell phones in Ventura, Calif. Try contacting him at backspin@gibbs.com.



NETBUZZ | BY PAUL MCNAMARA

Wikipedia confronts downside of 'Net openness

a substitute for simply "locking" those entries that frequently attract mischief makers and ideologues.

The problem Wikipedia is attempting to address with its new "Pending Changes" policy more or less mirrors the grief faced by proprietors of any Internet forum that attempts to foster open participation and discussion: Anonymity attracts trolls. (Blog spam has rocketed past e-mail spam on my list of annoyances.)

That tighter control will encourage participation — and improve quality — may seem counter-intuitive, but in the context of Wikipedia's long-running troubles with pranksters it makes a lot of sense. The new process is aimed at both first-time and anonymous contributors; in other words those who are most likely to cause trouble.

A blog post from Wikipedia's Moka Pantages explains: "Articles that are frequently subjected to malicious edits have long been locked, sometimes for years, and protected from editing by new and anonymous users. Over the last year, (we) have been working to develop Pending Changes, a softer alternative to these editing restrictions. At present, only about 0.1 percent of the 3.3 million articles on the English Wikipedia are under edit protection. This tool should help reduce disruptive edits or errors to articles while maintaining open, collaborative editing from anyone who wants to contribute."

Changes submitted by new or anonymous users will be screened by Wikipedia editors before they are published, a process that is sure to create controversies of its own, but one preferable to the free-for-all

that has rendered some Wikipedia pages untrustworthy.

The trial of the new system will cover a maximum of 2,000 pages.

Wikipedia recently announced that it has received a \$1.2 million grant to improve the accuracy of articles about public policy, many of which are targets of pranksters and less-than-objective editing.

Even as the site has grown ever larger, Wikipedia has experienced a serious decline in participation. Some of that decline has been attributed to the difficulty experienced by newcomers.

If it works, "Pending Changes" has a chance to address both issues.

Internet Society bids me adieu — briefly

The e-mail from The Internet Society (ISOC) hit my in-box with an unceremonious thud: "You have been unsubscribed from the ISOC-members-announce mailing list." Huh? What? Why? I didn't...

Now, granted, I have not attended ISOC meetings in recent years (ever, really) or offered the organization's activities much in the way of news coverage, but this banishment did catch me by surprise and I was at a loss to understand its motivation.

Then about an hour later came the second e-mail:

"I was doing some list maintenance on the isoc-members-announce list which caused unsubscribe messages to be sent to everybody on the list. If you have received this message you can rest assured that you are still subscribed to isoc-members-announce. I am very sorry for this mistake and hope I have not caused you undue concern.

Name Withheld to Protect the Careless" ■

Care to bid me something else? The address is buzz@nww.com.

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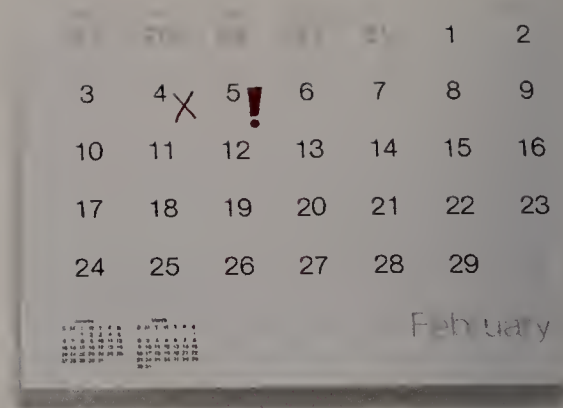
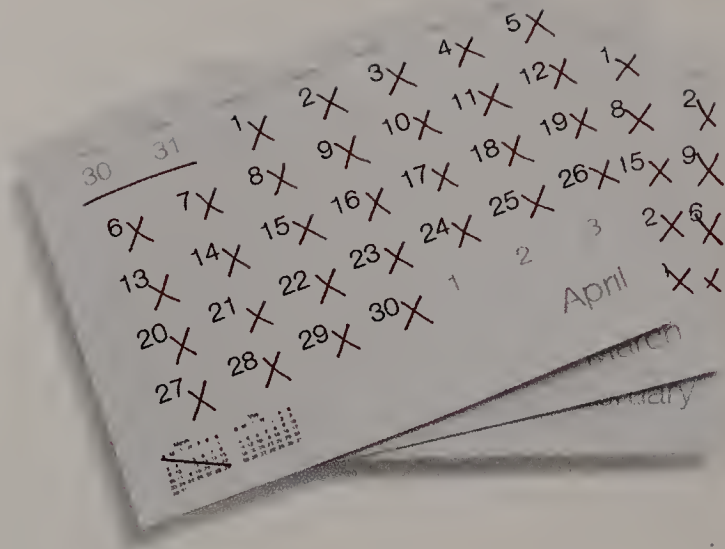
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